The Impact of Immigration on U.S. Population Size

by Leon F. Bouvier

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Since the onset of the 20th century, the population of the United States has tripled—from 75 million in 1900 to over 226 million in 1980. Both natural increase (births minus deaths) and net immigration (more immigrants than emigrants) have contributed to this growth.

During the 19th and much of the 20th century, natural increase accounted for a substantial portion of all population growth. Recently, the contribution of net immigration has increased considerably. If both legal and illegal entries are included, close to half of all growth can now be attributed to net immigration. This is even greater than the impact of immigration on U.S. population growth in the late 19th century and first decade of this century, when waves of European immigrants arriving in the U.S. in search of a new life totaled as high as one million in some years.

The *number* of immigrants has also increased in the last few years, in large part due to the many refugees and undocumented entrants. Perhaps 1-1/4 million persons may have immigrated to the United States during 1980. This exceeds the million entries recorded in 1907 and again in 1914. Thus, immigration now appears to be almost as important as fertility insofar as U.S. population growth is concerned.

It is important to bear in mind that "an increase or decrease in the percentage of population growth due to immigration can be the result of changes in any one or a combination of all four components (i.e., fertility, mortality, immigration, emigration). Thus the number of immigrants can decrease while the percentage of population growth due to immigration increases. Interpretation of a change in the percentage of population growth due to net migration requires knowledge of the direction and size of change of all four components."[1]

In the early 1900s, annual immigration sometimes exceeded one million and though natural increase was also high, the sheer level of immigration substantially affected population growth. By the early 1970s, annual *legal* immigration levels were around 400,000. However, fertility had fallen to the point where annual births would be outnumbered by deaths in the not-too-distant future if current trends continued. Thus, net immigration once again had become an important contributor to population growth, more because of low fertility than high level of immigration.

As we enter the 1980s, both factors are at work: the highest levels of immigration ever noted combined with declining levels of natural increase. Clearly, immigration will continue being an extremely important factor in the population growth of the U.S. for the foreseeable future.

This report examines how future U.S. population size might vary according to different levels of net immigration, also taking into account varying possible trends in future fertility. The results should be of value to decisionmakers concerned with U.S. immigration and population policy.

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The author, Dr. Leon F. Bouvier, is Director of Demographic Research and Policy Analysis at PRB. He has previously served as demographic advisor to the International Statistical Programs Center of the U.S. Bureau of the Census, the Select Committee on Population of the U.S. House of Representatives, and, most recently, the U.S. Select Commission on Immigration and Refugee Policy.

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The first decade of this century witnessed the largest immigration that had ever been recorded in U.S. history, some 880,000 entrants per year on the average (see Table 1). After the early 1920s immigration fell steadily before increasing somewhat in the 1950s and 1960s. However, it was not until 1968 when the full impact of the 1965 amendments to the 1952 Immigration and Naturalization law became operative that immigration increased substantially. The quotas established in 1924 and reconfirmed in 1952 were eliminated in the 1965 Amendments. The 154,000 annual limit on immigration from Eastern Hemisphere countries (there were no set limits on immigration from Western Hemisphere countries) was replaced by a new preference system which allowed 290,000 persons to enter each year in addition to about 100,000 immediate relatives of citizens who could enter outside the preference limits. For the next decade the number of legal immigrants hovered around 400,000 annually. Recent statistics indicate an increase to perhaps 600,000 or even 700,000 per year—including refugees as well as legal immigrants. Should this continue, it is quite likely that average annual legal immigration in the 1980s will approach or even exceed the 880,000 noted in the 1901-1910 period. As demographer Sergio Diaz-Briquets recently commented: "... it does not take a great deal of foresight or a crystal ball to anticipate that international immigration in the Americas ... will most likely intensify during the coming decade."[2] This will be particular true of immigration to the United States.

To this we must add the untold thousands of immigrants who enter the U.S. *illegally* every year, and subtract those who decide to return to their homeland. A recent study by the U.S. Bureau of the Census suggests that the number of illegal immigrants in the U.S. in 1977 was probably no greater than 6 million and no fewer than 3 million.[3] Annual *net* illegal immigration is generally assumed to be well in excess of 100,000 and perhaps approaches a half million. We must also consider the thousands of persons who emigrate from the U.S. every year. Again, the data are almost worthless. Demographers Robert Warren and Jennifer Marks Peck suggest that emigration might be in excess of 100,000 annually, though the Census Bureau assumes it to be much less—40,000 per year.[4]

If unregulated, immigation is totally unpredictable. Economic conditions can change at the migrant's place of origin as well as at the place of destination; political upheavals may result in massive refugee movements; immigration laws in the U.S. may well undergo radical change in the near future after the recommendations of the Select Commission on Immigration and Refugee Policy are made public. One thing is certain, unless restrictions are implemented, both legal and illegal immigration will continue to be substantial and with fertility expected to remain low, immigration will be an ever more important ingredient in the determination of U.S. population growth and size.

The U.S. still does not have a population policy which might guide overall planning in the future. Yet, in 1972 the President's Comission on Population and the American Future concluded that "long-term [population] planning is necessary...."[5] More recently the Select Committee on Population of the U.S. House of Representatives recommended that "Congress should investigate more fully the effect of the population size and growth rate of the U.S. on the well-being of our people."[6]

Determining the "best" immigration policy can hardly be accomplished without an overall population policy which includes at least a

TABLE 1

U.S. Population Size and Average Annual Legal Immigration, 1901-1978

Decade	Initial Population (in 1,000s)	Annual Average Legal Immigration	Annual Immigration as a Percentage of Initial Population Size	Decennial Net Immigration as a Percentage of Decennial Population Growth[a]
1901-1910	75,995	879,539	1.16	39.6
1911-1920	91,972	573,581	0.62	17.7
1921-1930	105,711	410,721	0.39	15.0
1931-1940	122,775	52,843	0.04	[b]
1941-1950	132,228	103,504	0.08	10.3
1951-1960	151,718	251,548	0.17	10.5
1961-1970	180,007	332,168	0.18	16.5
1971-1978	203,847	437,791	0.21	21.9

[a]Net immigration = immigration minus emigration. Emigration is estimated.

[b]Emigration exceeded immigration. Net immigration = -85,000.

tentative "optimum goal"—both as to population numbers and growth rates. The 1970-72 Presidential Population Commission concluded: "... we have found no convincing arguments for continued national population growth."[7] More recently, demographer Ansley Coale has stated: "We must have a stationary population eventually and in many ways sooner is better than later." He cautioned, however, that "... the path to a stationary population leads to the need for very substantial social adjustments, some of them painful, that we must foresee and for which we must start to prepare."[8] Some determination must be made as to whether or not the U.S. should aim for zero growth at some future point in time. Once that is determined, it will be easier to arrive at certain immigration levels.

We do know that if there is no change in the current 1.9 children per woman and current legal plus illegal immigration of at least one million per year, the U.S. population will exceed 300 million in 50 years and 400 million in 100 years. Should policymakers and the citizenry accept or reject such growth and ultimate size?

Projections and Predictions

Population projections are a necessary tool for policymakers. Legislation regarding education, housing, the elderly, child care services, transportation, etc., requires information on what the demands of the society are likely to be at some future point in time, and such information depends on reliable projections of future population size and distribution.

Immigration policy in particular should not be considered without looking at the demographic impact of immigration on U.S. population. How will U.S. population size vary according to different levels of immigration? What impact will immigration have on the labor force of the future; on school enrollments; on the ethnic makeup of the population? Only after reasonable projections have been made can we make reasonable plans for the future on a wide range of activities and programs.

The art of making projections is complex. Projections should not be confused with predic-

tions. Predictions tell us what the population "will be" in future years according to the person making the predictions. Projections state certain assumptions about future trends in fertility, mortality and migration, and then, based on these assumptions, the current population is projected to a future date. Assuming the mathematical calculations are correct, the projected numbers cannot be wrong. The assumptions upon which they are based can of course be incorrect. Generally, more than one alternative projection is offered.

To the layperson examining population projections, the numbers used, especially for fertility, are somewhat puzzling, even amusing. For example, "replacement level fertility" means that women have, on the average, 2.1 children. This simply means that thousands of women upon completing their reproductive stage of life will average 2.1 live births per woman. Some will have none; others one, two . . . ten--but the average will be 2.1. Similarly, while net immigration levels vary from year to year, they are assumed to average out at 800,000, for example. Life expectancy is assumed to be 72.8 years— but some people die at birth while others become centenarians. All this is taken into consideration in arriving at the sometimes peculiar sounding assumptions used in projection models.*

What the Calculations Show

Population Size: Our goal is to ascertain the impact of immigration on the size of the U.S. population over the next 100 years. One model, serving as a control, assumes no immigration whatsoever after 1980. To best determine the long-run impact of immigration, the population is separated into two subgroups: residents as of July 1, 1980 and their descendants; and immigrants arriving after July 1, 1980 and their descendants. The term "immigrant" implies "and their descendants" though the latter are in fact native-born. Thus "resident" and "immigrant" should not be confused with "native-born" and "foreign-born."*

Table 2, panel A, illustrates the impact of fertility (with no migration) on population size.** A few points are worth noting. First, a very slight change in fertility results in a large difference in total population. For example, an increase in average family size of .2 children (from 1.8 to 2.0) leads to a difference of 7 million people in the 20 years from 1980 to 2000 and about 60 million people in 100 years (1980 versus 2080).

Second, even if fertility remains below replacement level (that is, at 1.8 children per woman) the population will nevertheless continue to grow until at least 2030 because of a built-in momentum resulting from a relatively young population. Currently, there are so many young people in or about to enter childbearing ages as a result of the baby boom, that even at 1.8 births per woman, population will continue to grow until the disporportionately large group in childbearing ages levels off and the number entering the population through birth equals that leaving the population by death. A gradual decline then follows (i.e. deaths surpass births) and within 70 to 100 years (2050 to 2080) the rate of decline itself stabilizes. That is to say, the rate no longer changes. If fertility remains at 1.8, by 2080 the population will have fallen from the assumed 222 million of 1980 to 202 million. It will then continue to fall at an unchanging annual rate of .4 percent. Thus the

*The materials used in calculating the projections for this report are discussed in some detail in the Appendix. The assumptions used and the rationale behind them are also discussed.

*Such an arbitrary dichotomy does not take into consideration the offspring of immigrant and resident parents. Their impact, however, should be minimal.

**In this report, the total fertility rate (TFR) is used to indicate levels of fertility. The TFR indicates how many live births a woman would have if throughout her reproductive years she bore children at the rates which women of all ages actually did bear children in a specific year.

TABLE 2

Projected U.S. Population Size and Growth Rate, 2000 to 2080, By Level of Annual Immigration and Total Fertility Rate

Total Fertility Rate	Year 2000 Total Population (1,000s)	2000 Pop. Growth Rate (%)	2030 Total Population (1,000s)	2030 Pop. Growth Rate (%)	2050 Total Population (1,000s)	2050 Pop. Growth Rate (%)	2080 Total Population (1,000s)	2080 Pop. Growth Rate (%)
			(A) Annual Net Immigration = 0					
1.8	243,677	0.3	244,835	-0.2	277,315	-0.4	201,563	-0.4
2.0	250,348	0.4	267,797	0.03	264,851	-0.06	260,790	-0.05
2.2	257,722	0.5	295,010	0.3	311,603	0.3	341,266	0.3
			(B) Annual Net Immigration = 250,000					
1.8	249,539	0.4	261,219	-0.07	250,720	-0.2	234,870	-0.2
2.0	256,318	0.5	284,928	0.2	289,904	0.08	297,927	0.1
2.2	263,809	0.6	312,998	0.4	338,612	0.4	383,209	0.4
			(C) Annual Net Immigration = 500,000					
1.8	255,402	0.5	277,603	0.06	274,125	-0.08	268,177	-0.06
2.0	262,287	0.6	302,059	0.3	314,957	0.2	335,066	0.2
2.2	269,896	0.8	330,986	0.5	365,620	0.5	425,149	0.5
			(D) Annual Net Immigration = 750,000					
1.8	261,265	0.6	293,987	0.2	297,530	0.04	301,485	0.05
2.0	268,257	0.7	319,190	0.4	340,009	0.3	372,204	0.3
2.2	275,983	0.9	348,974	0.6	392,631	0.6	467,096	0.6
			(E) Annual Net Immigration = 1,000,000					
1.8	267,127	0.7	310,371	0.3	320,935	0.1	334,792	0.1
2.0	274,226	0.8	336,321	0.5	365,063	0.4	409,343	0.4
2.2	282,070	1.0	366,962	0.7	419,641	0.7	509,039	0.6
			(F) Annual Net Immigration = 2,000,000					
1.8	290,578	1.1	375,907	0.6	414,555	0.5	468,022	0.4
2.0	298,104	1.2	404,844	0.8	466,305	0.7	558,011	0.6
2.2	306,419	1.4	438,915	1.0	527,677	0.9	676,806	0.8

population would be reduced by half every 175 years from 2080 onward.

Interestingly, having exactly 2 live births does not lead to a zero growth population as might be expected. After peaking at 268 million in 2030, the population would then decline slightly to 261 million in 2080 and the fall would continue, albeit very slowly, thereafter.*

*An average of 2.1 and not 2.0 live births per woman are needed for one female to live to replace her mother—that is "replacement level fertility." Two factors account for this: (1) more males are born than females; (2) not all women live through their childbearing years.

Should fertility climb above replacement to 2.2 live births per woman, growth would never end. By 2080 the population would have surpassed 341 million—140 million more than would be the case if fertility had remained at 1.8.

Table 2, panels B-F, illustrates the relative impact of immigration and fertility on population size. Should the recent very low fertility level of 1.8 births per woman be maintained for the foreseeable future, net immigration of 250,000 per year would lead to a maximum population of 263 million in 2025. Beyond that date, the population would decline at a slow rate, reaching 235 million in 2080 at which time the rate of decline would be -.2 percent. A net immigration of 750,000 per year would lead to a population of 294 million in 2030 and 301 million in 2080—at which time the rate of growth would still be positive (.05 percent).

In one century, assuming fertility at 1.8 births per woman, net immigration of 750,000 per year would result in 100 million additional people. Without any net immigration the population in that year would be 202 million; with 750,000 per year it would be 301 million. In just 50 years (2030) the difference would amount to 50 million people. Higher levels of immigration would of course yield still greater totals, despite the maintenance of very low fertility (see Table 3).

This assumption of low fertility may not be realistic. Some demographers foresee an increase in family size in the near future and preliminary data from the National Center for Health Statistics suggest a total fertility rate of

TABLE 3

Differences in U.S. Population Size Between No Immigration And Selected Levels of Net Immigration, 2000-2080

Total Fertility Rate	Differences in Population Size (in 1,000s)			
	2000	2030	2050	2080
	(A) Annual Net Immigration = 250,000			
1.8	5,862	16,384	23,405	33,307
2.0	5,970	17,131	25,053	37,137
2.2	6,087	17,988	27,009	41,943
	(B) Annual Net Immigration = 500,000			
1.8	11,725	32,768	46,810	66,614
2.0	11,939	34,262	50,106	74,276
2.2	12,174	35,976	54,017	83,883
	(C) Annual Net Immigration = 750,000			
1.8	17,588	49,152	70,215	99,922
2.0	17,909	51,393	75,158	111,414
2.2	18,261	53,964	81,028	125,830
	(D) Annual Net Immigration = 1,000,000			
1.8	23,450	65,536	93,620	133,229
2.0	23,878	68,524	100,212	148,553
2.2	24,348	71,952	108,038	167,773
	(E) Annual Net Immigration = 2,000,000			
1.8	46,901	131,072	187,240	266,459
2.0	47,756	137,047	201,454	297,221
2.2	48,697	143,905	216,074	335,540

TABLE 4

Effects of Alternative Assumptions about Immigrant Fertility On the Population of the United States, 2000-2030

(Fertility of residents = 1.8 children per woman)

Year and Net Immigration Level	Fertility of Immigrants (children per woman)		
	Constant 1.8	1.8 to 2.4	Constant 2.4
		(Numbers in 1,000s)	
2000			
250,000	249,539	249,937	250,251
500,000	255,402	256,198	256,825
750,000	261,265	262,458	263,399
1,000,000	267,127	268,719	269,973
2,000,000	290,578	293,761	296,268
2030			
250,000	261,219	261,715	264,284
500,000	277,603	278,595	283,732
750,000	293,987	295,475	303,181
1,000,000	310,370	312,354	322,629
2,000,000	375,907	379,873	400,424

1.9 for 1980. Should fertility climb to 2.0 by 1985, and should net immigration be limited to 250,000 per year, the population would increase to 285 million in 50 years and to 298 million by 2080 at which time the rate of growth would still be slightly positive. If net immigration were half a million a year, the 300 million mark would be reached in 2030 and by 2080, the population would be 335 million or 110 million more than at present and 75 million more than without immigration.

Annual net immigration of 750,000 combined with a total fertility rate of 2.0 would lead to a population of 319 million in 2030 and 372 million in 2080, bringing the rate of growth to .3 percent.

If U.S. fertility rises once again above replacement level to 2.2, population growth would never cease. With immigration limited to 250,000 per year, the population would reach 264 million by 2000 and 383 million in 2080. Any additional immigration would lead to a doubling of the U.S. population by 2080.

In these projections, it was assumed that people residing in the U.S. in 1980 and their descendants, and immigrants arriving after 1980 and their descendants, would exhibit the same average fertility. This may or may not reflect reality. Two alternative projections were prepared and are discussed in the Appendix.* Table 4 describes the effect of these variations in immigrant fertility using 1.8 as the TFR for the resident population over the period 1980-2030. While the impact of higher immigrant fertility increases over time, it is not substantial until 2030 and then only under relatively high net immigration assumptions. Projections were not carried out beyond 2030. By then a significant portion of "immigrants and their descendants" would in fact be native born, and assuming higher fertility to that overall group seemed inappropriate.

Another contributory factor to changing population size is the age distribution of the immigrant population. Here, it is assumed that the age-sex distribution of 1977 legal immi-

*These assume (1) fertility of immigrants is 2.4 in 1980 and falls by .2 children every five years until it reaches the fertility level for residents; (2) immigrant fertility remains at 2.4 to 2030.

TABLE 5

Alternative Immigrant Age-Sex Distributions And Their Effect on U.S. Population, 2030

(Fertility = 1.8; Net immigration = one million)

Age Group	Assumptions of This Report		Family Reunification (1st, 2nd, 4th, and 5th preferences)		Occupational (3rd and 6th preferences)	
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
0-4	2.9	2.8	2.9	2.8	2.8	2.7
5-9	3.0	2.8	3.0	2.8	2.9	2.8
10-14	3.1	2.9	3.1	2.9	3.0	2.8
15-19	3.1	3.0	3.1	3.0	3.0	2.9
20-24	3.1	3.1	3.2	3.1	3.0	2.9
25-29	3.1	3.1	3.2	3.1	3.0	3.0
30-34	3.2	3.2	3.2	3.2	3.2	3.1
35-39	3.3	3.3	3.3	3.3	3.4	3.3
40-44	3.4	3.4	3.4	3.4	3.5	3.5
45-49	3.3	3.4	3.4	3.4	3.5	3.5
50-54	3.0	3.1	3.0	3.1	3.1	3.1
55-59	2.8	3.0	2.8	3.0	2.9	3.0
60-64	2.8	3.1	2.8	3.1	2.9	3.1
65-69	2.7	3.3	2.7	3.2	2.8	3.3
70-74	2.2	3.0	2.2	2.9	2.3	3.1
75-79	1.4	2.3	1.4	2.3	1.5	2.4
80+	1.4	3.2	1.4	3.2	1.4	3.2
Total Population	148,692,000	161,679,000	150,569,000	162,102,000	148,272,000	158,704,000
	310,371,000		312,671,000		306,976,000	

Family Reunification Preferences:
1. Unmarried sons and daughters of U.S. citizens and their children
2. Spouses, unmarried sons and daughters of resident aliens
4. Married sons and daughters of U.S. citizens and their spouses
5. Brothers and sisters of U.S. citizens and their spouses

Occupational Preferences:
3. Immigrants in professions and their spouses and children
6. Other workers and their spouses and children

grants (minus an estimate of age-sex distribution of recent emigrants) will be maintained in the future. Two other age distributions were considered: (1) the 1977 age-sex distribution of immigrants entering the country under the family reunification preferences; and (2) the 1977 age-sex distribution of immigrants entering under the occupational preferences. As noted in Table 5, variations in age composition can result in fairly substantial numerical differences (6 million in 50 years), and thus should be monitored regularly.

Other projections might have been as useful or relevant. We might have investigated the relative impact of immigration with even lower fertility. Nevertheless the alternative projections used here should contribute needed information regarding the demographic impact of immigration to policymakers and other interested persons.

A number of observations based on these projections warrant comment. The longer the projection period the more dramatic the differences attributable to fertility and immigration.

TABLE 6

Actual Births, Deaths, Net Immigration, Assuming Total Fertility Rate of 1.8 and Net Immigration of 250,000, 1990-2050

	Annual Numbers (in 1,000s)						
	1990	2000	2010	2020	2030	2040	2050
Births	3,579	3,169	3,134	3,036	2,873	2,797	2,708
Deaths	2,243	2,470	2,672	2,905	3,317	3,566	3,510
Net Immigration	250	250	250	250	250	250	250
Growth	1,586	949	712	381	-194	-519	-552
Total Population	238,623	249,539	256,890	261,736	261,219	256,580	250,720

For example, with net immigration constant at 250,000, the difference between fertility of 1.8 and 2.0 is 7 million in 2000; 39 million in 2050 and 63 million in 2080. However, with fertility under replacement level growth itself slows down over time and eventually becomes negative. This is an important finding, which is not always apparent. As long as natural increase is negative, *eventually* the population growth rate will also become negative before leveling off at some stationary point in the more distant future.

In determining future population size, the effect of fertility changes is stronger than that of immigration changes. For example, if net immigration is held constant at 500,000, an increase of just 10 percent in fertility (1.8 to 2.0) adds 7 million people in 20 years, 24 million in 50 years and 59 million in 100 years. On the other hand, a 50 percent increase in net immigration (500,000 to 750,000), holding fertility constant at 1.8, increases the size of the population by 6 million in 20 years, 17 million in 50 years and 33 million in 100 years.

This reflects the proportionately small size of annual net immigration compared to both the total population and the total number of births. While a half million or more newcomers per year is a large *number*, its impact on a total population of 220-250 million is not great. With some 3.5 million births per year, as there now are in the U.S., this means 6 or 7 births for every immigrant. Finally, each new-born resident will live some 75 years on the average; each new immigrant will live some 50 additional years in the U.S., on the average.

But, immigration as well as natural increase (births minus deaths) is cumulative over time. Immigration becomes a more important contributor to population growth as time goes by. For example, net immigration of 500,000 per year represents 26 percent of all growth in the 1980-90 decade if the TFR is 1.8. By the turn of the century about half of all growth will be attributable to net immigration and by 2020-2030 *all* growth will come from net immigration as births *decline* to the point that deaths exceed them.

Population grows (or declines) only through natural increase/decrease and/or net migration. As long as fertility remains below 2.1, the *intrinsic* rate of natural increase will be negtive.* That is to say, in the long run deaths

*The intrinsic rate of natural increase is a hypothetical measure which indicates what the rate would be if age-specific fertility and mortality never changed. Should such conditions exist, it would take approximately 70 years to reach the point where the intrinsic rate would in fact reflect the actual situation. For example, if the current TFR (a sum of age-specific fertility rates) and life expectancy (based on age-specific mortality rates) do not change in the future, the number of deaths will eventually exceed the number of births and the rate of natural increase will be -.54 percent by around 2050.

TABLE 7

Median Age of U.S. Population, 2000 to 2080, By Fertility Level and Level of Annual Immigration

Total Fertility Rate	Median Age of Population			
	2000	2030	2050	2080
	(A) Net Immigration = 0			
1.8	36.8	42.4	43.4	44.6
2.0	36.0	39.9	40.2	41.2
2.2	35.1	37.1	37.2	38.0
	(B) Annual Net Immigration = 500,000			
1.8	36.4	41.4	42.1	43.1
2.0	35.6	39.1	39.4	40.3
2.2	34.7	36.7	36.7	37.4
	(C) Annual Net Immigration = 750,000			
1.8	36.2	41.0	41.7	42.6
2.0	35.4	38.7	39.1	39.9
2.2	34.3	36.4	36.5	37.3
	(D) Annual Net Immigration = 1,000,000			
1.8	36.1	40.6	41.3	42.3
2.0	35.3	38.4	38.8	39.7
2.2	34.3	36.2	36.3	37.1
	(E) Annual Net Immigration = 2,000,000			
1.8	35.5	39.5	40.2	41.3
2.0	34.7	37.5	38.1	39.1
2.2	33.7	35.5	35.8	36.7

will exceed births—thus the surprisingly low rate of growth noted in 2080 with a TFR of 2.0 and net immigration of 1 million (.37 percent). However, even if natural increase is intrinsically negative, the *actual* rate continues to be positive (i.e., more births than deaths) for many years even if each woman averages less than replacement level fertility. This is because there are relatively more women in the childbearing ages, because of the baby boom, than there are at the older ages when deaths normally occur. This explains the large increase to be expected in the U.S. population before the year 2000, even if fertility remains below replacement at 1.8 births per woman. This is illustrated in Table 6.

The U.S. is entering a new demographic era. At the beginning of the 20th century, both natural population increase (births minus deaths) and net immigration were positive and the total population numbered around 80 million. Today, with the population having passed

225 million, natural growth is on the verge of becoming negative as fertility levels remain low. But net immigration, which had declined in earlier decades, has once again attained the high levels noted in the early 1900s. While changes in fertility still affect population size more than do changes in immigration, over time the contribution of net immigration to population growth will become more and more important.

Age Composition: Variations in the age composition of the U.S. population will plague the nation for at least another 50 to 75 years. This results from dramatic changes in fertility during this century: the low fertility of the 1930s, the baby boom between 1947 and 1964; the baby bust of the 1970s. Between 1955 and 1964, 43 million births occurred; in a comparable span of time, between 1970 and 1979, about 33 million births occurred. Consider the different impacts on the society as these two different-sized cohorts go through their life cycle. While these are not the main concerns of this report, they help explain the changes that will

TABLE 8

Age Distribution (%) of U.S. Population, 2000 to 2080, By Fertility Level and Level of Annual Net Immigration

Total Fertility Rate	Year											
	2000			2030			2050			2080		
	5-19	20-64	65+	5-19	20-64	65+	5-19	20-64	65+	5-19	20-64	65+
	(A) Net Immigration = 0											
1.8	20.6	60.0	13.1	17.2	55.5	21.9	16.7	55.0	23.0	16.2	53.6	25.0
2.0	22.1	58.4	12.8	19.0	54.8	20.0	18.6	55.0	20.3	18.2	53.8	21.9
2.2	23.8	56.7	12.4	20.9	53.9	18.2	20.6	54.6	17.7	20.3	53.7	19.2
	(B) Annual Net Immigration = 250,000											
1.8	20.8	60.1	12.9	17.4	55.9	21.2	16.9	55.5	22.2	16.5	54.2	24.0
2.0	22.2	58.5	12.6	19.2	55.1	19.5	18.8	55.3	19.7	18.4	54.2	21.3
2.2	23.7	56.8	12.2	21.0	54.1	17.7	20.8	54.9	17.3	20.4	53.9	18.8
	(C) Annual Net Immigration = 500,000											
1.8	20.8	60.1	12.7	17.6	56.2	20.6	17.1	55.8	21.5	16.8	54.6	23.3
2.0	22.3	58.6	12.4	19.3	55.5	18.9	19.0	55.6	19.2	18.6	54.5	20.8
2.2	23.8	56.9	12.0	21.2	54.5	17.3	20.9	55.0	16.9	20.5	54.1	18.4
	(D) Annual Net Immigration = 750,000											
1.8	20.9	60.2	12.5	17.8	56.5	20.1	17.3	56.1	21.0	17.0	54.9	22.7
2.0	22.3	58.7	12.2	19.5	55.7	18.5	19.1	55.8	18.8	18.7	54.7	20.4
2.2	23.8	57.0	11.9	21.3	54.7	16.9	21.0	55.2	16.6	20.6	54.3	18.1
	(E) Annual Net Immigration = 1,000,000											
1.8	21.0	60.2	12.4	17.9	56.8	19.6	17.5	56.4	20.5	17.1	55.2	22.2
2.0	22.4	58.7	12.1	19.6	55.9	18.1	19.2	56.0	18.4	18.8	54.9	20.1
2.2	23.8	57.1	11.7	21.4	54.9	16.6	21.0	55.4	16.4	20.6	54.4	17.9
	(F) Annual Net Immigration = 2,000,000											
1.8	21.3	60.4	11.8	18.4	57.7	18.0	17.9	57.2	19.1	17.5	55.9	21.0
2.0	22.6	58.9	11.5	20.0	56.7	16.7	19.5	56.5	17.5	19.1	55.4	19.2
2.2	24.0	57.3	11.1	21.6	55.5	15.4	21.3	55.8	15.6	20.8	54.8	17.3

be forthcoming with or without immigration.

How much of an impact will immigration have on the future age-sex distribution of the population? This depends not only on the number of immigrants but also on the age-sex composition of the immigrant group. If the age-sex composition used in this report accurately reflects the future age composition of net immigration, then the conclusion is clear: immigration, regardless of size, does not influence the overall age distribution of the U.S. population to any substantial extent. As can be seen in Table 7, it does *retard* the population aging process slightly. For example, if fertility is 2.0, the median age of the population in 2080 will only vary between 41.2 years (no immigration) and 39.1 years (net immigration of 2 million). Societies age not as a result of declining mortality but as a result of declining fertility. A low fertility country will have a high median age while most developing countries with high fertility have low median ages. Thus, for example, in the U.S. in 2080, assuming constant net immigration of 500,000 the median age would be 43.1 with low fertility (1.8) and 37.4 with high fertility (2.2). Today the median age is about 30 (half the population is below that age and half is older). Continued low fertility will age the population and immigration will retard but will not stop this process. Immigration retards aging because the immigrant group is "younger" than the resident group. It fails to stop it because its impact is less powerful than that of fertility.

Numerically, immigration plays a more important role. For example, in 2030 (with a TFR of 2.0 and immigration of 500,000), the *number* of elderly will be 3.5 million greater with immigration than without it (Table 9, panel B). Yet 18.9 percent of the population will be aged 65+ compared to 20 percent without immigration (Table 8). Using the same assumptions about fertility and immigration, in 2030 the proportion of the population in the working age group (20-64) will be about the same with or without immigration. However, the numerical difference will be substantial, 21 million. Even if net immigration were limited to 250,000 a year, in 50 years there would still be 10 million additional potential members of the labor force than would be the case without any immigration (see Table 9). Clearly immigration as well as fertility will have a tremendous impact on all of society—from the school room to the place of work to the retirement home. These impacts will be discussed in a forthcoming report.

Resident and Immigrant Composition: Because of the decline in fertility and continued net immigration, immigrants and their descendants will become an ever greater portion of the total U.S. population in future years. This pro-

TABLE 9

Total Population Aged 20-64 and 65 and Over In 2030 By Fertility Level and Level of Annual Net Immigration

(in 1,000s)

Total Fertility Rate	Level of Annual Net Immigration					
	No Migrants	250,000	500,000	750,000	1,000,000	2,000,000
	(A) Population Aged 20-64					
1.8	134,155	146,018	156,117	166,218	176,317	216,715
2.0	146,754	156,946	167,419	177,755	188,091	229,422
2.2	159,032	169,626	180,219	190,815	201,408	243,785
	(B) Population Aged 65+*					
	53,654	55,418	57,182	58,945	60,709	67,764

*Fertility differentials do not affect the size of the elderly population in 2030.

TABLE 10

Percent of Post-1980 Immigrants and Descendants in Total Population, 2000-2080, by Fertility Level and Level of Net Immigration

Total Fertility Rate	Percent in Total Population			
	2000	2030	2050	2080
		(A) Annual Net Immigration = 500,000		
1.8	4.6	11.8	20.6	24.8
2.0	4.6	11.3	18.9	22.2
2.2	4.5	10.9	17.2	19.7
		(B) Annual Net Immigration = 750,000		
1.8	6.7	16.7	23.6	33.1
2.0	6.7	16.1	22.1	30.0
2.2	6.6	15.5	20.6	26.9
		(C) Annual Net Immigration = 1,000,000		
1.8	8.8	21.1	29.2	39.8
2.0	8.7	20.4	27.5	36.3
2.2	8.6	19.6	25.7	33.0
		(D) Annual Net Immigration = 2,000,000		
1.8	16.1	34.9	45.2	56.9
2.0	16.0	33.9	43.2	53.3
2.2	15.9	32.8	40.9	49.6

portion will depend on (1) level of immigration; (2) level of future natural increase or decrease; and (3) time span. As Table 10 shows, if net immigration is held at 750,000 per year and fertility is low (1.8), by 2000, 6.7 percent of the population will consist of immigrants and their descendants. By 2050, about one quarter of the population will fall in that category and one-third will do so in 2080. Almost 40 percent of the population in 2080 would be post-1980 immigrants and their descendants if net immigration averaged 1 million per year and fertility was 1.8—not too different from the present situation. This does not take into account the impact of offspring born of marriages between immigrants and residents.

An increase in fertility would, of course, mean a somewhat smaller proportion of immigrants and their descendants in the population. Similarly, a smaller number of immigrants would yield the same result.

Just as similarities as well as dissimilarities were noted earlier concerning the effect of immigration on the population at the beginning of the century and today, so too similarities and dissimilarities can be noted concerning the effect of immigration on ethnic composition between the 19th century and the next 100 years.

In the earlier period, immigration was an important contributor to growth though natural increase was also large. The contribution of immigration to the U.S. population resulted in a vastly different concept of "American." By 1900, the U.S. was no longer a predominantly "WASP" society, that is, of North and West European and Protestant origin. Rather, it had become quite different from the homogeneous society of colonial days. Indeed, demographer Campbell Gibson has calculated that, "about 32 million or 42 percent of the 1900 census population of 76 million were attributed to immigration in the 1800-1900 period."[9]

Over the next century, immigration will once again become a very important contributor to population growth, particularly when combined with negative natural increase. It seems likely that 40 percent of the 2080 population will consist of post-1980 immigrants and their descendants. The similarity with the 1800-1900 pattern ends there. Whereas 19th century immigration itself was very heterogeneous, it remains to be seen if such heterogeneity will be a characteristic of 1980-2080 immigration.

Discussion of Population Size Options

In developing immigration policy, many non-demographic factors are involved. International relations are an important aspect of the overall problem; humanitarian concerns for the millions seeking a better way of life are worthy of our attention; the responsibility of the U.S. toward poorer countries and economic growth both in the U.S. and elsewhere must be considered. However, the demographic side is also an essential factor. While limiting population size is not an "end" in itself, the true goal—that is, improved quality of life for everyone—cannot be realized if population growth is left unchecked. Thus, not only are the actual numbers critically important, but one must inquire as to whether a much larger U.S. population to feed will allow the country to maintain its role as the bread basket of the world. There is serious doubt as to whether the U.S. can continue to export basic food necessities after the year 2000 if current rates of population growth are maintained. Consider the increasing demands on energy resources that 50 million or 100 million more Americans will make. Possibly any energy savings, from "synfuels", for example, may be erased by increased adult immigration. Thus, while our concern here is solely with the demographic aspects of immigration, that demographic dimension in itself is closely related to such other issues as resource depletion, food production, etc.

A major question must be answered. How many immigrants can the U.S. reasonably accept? The U.S. can learn a great deal from Canada and Australia. Their reviews of immigration policy were based on substantive demographic research and analysis. Each developed a set of principles or objectives for immigration policy and each resulted in new immigration policies clearly tied to demographic planning.

To cite but one example from the Canadian immigration act of 1978, section 7 indicates that the federal government will table an annual report to Parliament specifying ". . . the number of immigrants that the government of Canada deems it appropriate to admit during any specified period of time." Furthermore, the government must also specify the ". . . manner in which demographic conditions have been taken into account in determining that number."[10]

Before the question "How many immigrants can the U.S. reasonably accept?" can be answered, the matter of population policy in its broadest aspects should be addressed. Should this policy advocate an eventual stationary population and if so at what size—250 million, 300 million, 1 billion? And when? In 2000? In 50 years or 100 years? Should that policy advocate more and more growth ignoring the problems associated with over-population such as resource depletion? Should that policy advocate lowering the size of the population to 200 million, 150 million, or even less, ignoring the problems related to population decline, such as an aging society?

Advocates of both unlimited growth ("Bigger is Better") and negative growth ("Small is Beautiful") have their arguments, some of which are quite cogent. A population policy based on unlimited growth might advocate both higher fertility and larger numbers of immigrants; a population policy based on negative growth might foster lower fertility and very limited immigration. However, if the recommendations of recent government commissions are

followed, then eventual zero growth would be the stated goal embodied in a population policy. But, at what level and when? That question remains unresolved. The 1970-72 President's Commission on Population and the American Future concluded: "Recognizing that our population cannot grow indefinitely and appreciating the advantages of moving now towards the stabilization of population, the Commission recommends that the nation welcome and plan for a stabilized population."[11] Furthermore it concluded: " . . . after two years of concentrated effort, we have concluded that no substantial benefits would result from continued growth of the nation's population."[12]

Bearing in mind the built-in momentum in population growth, alternative ways of reaching certain stated population goals can be suggested. Arbitrarily, let us select a stationary population of 300 million to be reached within the next 50 to 100 years (other goals based either on unlimited or negative growth can be selected). Such a goal may appear unreasonably high, representing a 33 percent increase in the present population. On the other hand, given the youth of the population and thus its momentum for growth, it may be the most realistic goal to aim for at this time.

Fertility behavior is the crucial variable. If that remains very low (TFR 1.8) net immigration of 750,000 would be the upper annual limit. This would bring the population to 294 million in 2030 and the built-in momentum would be so strong that population growth would continue, reaching 301 million by 2080 when growth would still be occurring, though at a very slow rate—.05 percent.

Any increase in fertility would change all this. If fertility climbed to 2.0 then net immigration would have to be limited to about 250,000 if zero growth were to be realized at around 300 million. Here again we must be aware of population momentum. A TFR of 2.0 and net immigration of 250,000 lead to 285 million in 2030 and 298 million in 2080 when the rate of growth would be .1 percent.

Should fertility climb to 2.2, in theory all immigration would have to cease. Small numbers like 100,000 might be tolerable as perhaps close to that number might emigrate, but zero growth would never be attained. With fertility at 2.2 and annual net immigration of 250,000, the population would have reached 313 million by 2030; and by 2080 it would be 383 million.

Similar scenarios oriented to different optimum maximum populations can be developed.

TABLE 11

Suggested Annual Net Immigration Levels According To Specified Total Fertility Rates and Optimum Maximum Population Size, Circa 2050

Total Fertility Rate	(Maximum Population) 200 million	250 million	300 million	350 million
	Annual Net Immigration			
1.8	50,000-100,000	250,000-300,000	700,000-750,000	1,000,000-1,250,000
2.0	0	50,000-100,000	250,000-300,000	500,000-600,000
2.2	0	0	50,000-100,000	200,000-250,000

In all instances, combinations of certain rates of natural growth (or decline) and net immigration will make it possible to arrive at the stated goals.

Table 11 gives an approximate estimate of the net immigration possible under certain assumptions about fertility and maximum population to be attained within the next 50 to 100 years.

It is clear from this discussion that (1) while an immigration policy necessarily should indicate the annual numerical level of entries desired, that cannot be determined unless some overall population policy is accepted; (2) any population policy (and by implication, immigration policy) must take into consideration both natural change and net immigration. The fact that population change is so sensitive to even minor alterations in fertility has led to some confusion over policy implications. The impact of fertility on population size is clearly stronger than the impact of immigration. This does not mean that immigration is an unimportant contributor to that growth. It does mean, however, that because fertility is both important and volatile, the levels of immigration, as well as fertility, must be monitored constantly in order to maintain a balance between an uncontrollable variable—fertility—and a controllable variable—immigration. Thus, immigration policy should not be determined without taking fertility into consideration.

All this suggests that the Canadian law which specifies the importance of the demographic dimensions might well be borrowed. Perhaps the annual immigration limits should be flexible and be related to the birth rate or rate of natural increase/decrease. Should fertility remain low or fall even more, then immigration levels might be raised, depending of course on the specified optimum maximum population.

The U.S. is at a critical point in its demographic history. Long proud of its rapid growth—from 4 million in 1790 to 75 million in 1900 to 227 million in 1981—increasingly it is being recognized that growth of any kind cannot long continue.

Rising anxiety about population growth began to appear in the 1960s. The baby boom generation was "coming of age" and there was fear that their parents' fertility patterns would be repeated. "Zero population growth" became a household phrase and perhaps contributed to the increased interest in the population issues which culminated in the creation of the President's Commission on Population Growth and the American Future.

The 1970s marked the beginning of an unexpected decline in fertility so great that even the short-run projections of the Commission were proven wrong. The media incorrectly heralded the attainment of zero population growth. The 1970s also saw increased attention being given to a phenomenon of mounting significance—international migration, both legal and illegal.

Recent events in Southeast Asia and the Caribbean together with an apparently worldwide desire on the part of more people to improve their lot in life by migration create new demands on most developed countries of the world— in particular the U.S.

The potential increases in immigration combined with possible natural decrease are forcing the U.S. to face up to certain unpleasant choices. On the broadest level, a population policy must be developed at least insofar as eventual population size is concerned. Once this is decided, a determination must be made as to how it is to be accomplished. What demographic path should be taken to arrive at the desired population size? More specifically to the interests of this report, what limits should be placed on immigration?

Three paths can be followed if indeed a specific level of ultimate population size is desired: (1) slight increase in fertility and lower levels of net immigration (perhaps 250,000); (2) present levels of fertility and perhaps 500,000 (net) immigrants per year; (3) lower levels of fertility (perhaps 1.5) and as many as 1 million (net) immigrants per year.

These options lead to a vastly different population composition in 50 to 100 years. Discussion of this question can lead to demagoguery

and racism, yet we must address the issue squarely and state exactly what options are available and what they mean for the future.

During the 19th and early 20th centuries, the U.S. indeed welcomed "the tired, the poor, and the huddled masses yearning to be free." Such a benign policy changed the composition of the nation; most people would add: "and for the better." This dramatic change did not come about without much bitterness and xenophobia on the part of certain segments of the population. The U.S. citizenry of today must be told of the consequences of future population-related policies and what they mean for the future size and composition of the nation. As the nation overcame such obstacles one century ago, so too should it be able to be successful once again, though under vastly different circumstances.

At the outset of this report we stated that it would be foolhardy to develop immigration policy without having some idea of desired optimum population size, and some projections detailing the impact of immigration and fertility on future population growth.

We do not as yet have any kind of population policy; we have however provided these projections using reasonable assumptions about fertility and migration trends. With this kind of information, policymakers can perhaps better answer the question "How many immigrants should the U.S. accept every year?" Once that question is answered, then and only then should we turn to other immigration related issues.

Appendix

Methodology: The cohort-component method of projecting population is used in this report. There are other, simpler methods, but these yield misleading findings. For example, currently the *crude* rate of population growth in the U.S. is about .8 percent (excluding illegal entries). Continuation of such a rate of growth would result in a doubling of the population in about 85-90 years. This fails to take into consideration the age composition of the population and leads us to assume that natural growth (i.e. births minus deaths) will continue to be positive although women are averaging fewer than two live births—a clear impossibility!

In the cohort-component method, separate assumptions are made for fertility, mortality and migration for each age and sex. In that way, the base population is literally followed through life with births being added according to the assumed age-specific fertility rates, deaths being subtracted according to age-sex-specific probability rates and net migration being added according to the stated size and age-sex distribution of that group. At five-year intervals (or at one-year intervals if desired) these components may be reassembled to produce an estimate of the population in that year.

U.S. Population Today: It is not possible to state with any great confidence the exact population of the U.S. at any given point in time. The census clock in the lobby of the Department of Commerce building in Washington, D.C. gives us an *estimate* of the size of the population—an estimate that is probably incorrect, although no one knows for certain by how much.

Three types of difficulties are involved: conceptual, methodological, and definitional.

Who shall be included in the U.S. population? More specifically, who should be counted (and who should not be counted)? Article 1, Section 2, of the U.S. Constitution, which is the

legal authority for the decennial census, makes no reference as to who should or should not be counted. The Census Bureau attempts to count all *residents* of the U.S. Thus the basic dichotomy is resident and nonresident and not citizen and alien. Anyone who is a resident of the U.S. —that is, who resides here at least semi-permanently—is included in the census. Thus permanent immigrants (though not citizens) are presumably counted. On the other hand tourists and foreign students are excluded as are foreign emissaries living in their embassies.

The methodological problem involves undercount. After each census, the Bureau undertakes a series of special studies to determine how many people were missed. In 1970 the Census Bureau estimated it omitted about 2.5% of the population or about 5 million people. A similar number was probably missed in 1960, representing a higher percent of the population. There are wide variations in the undercount by age, sex and race. It remains to be seen how many residents were missed in 1980.*

In addition to the undercount, a major question looms over the illegal immigrant population. No one knows how many are included in the census as there are no questions on legality of residence. (A question on citizenship is included.) Presumably some illegals are counted; how many and what proportion they represent of all illegals remain a mystery.

Finally, there are definitional problems. Exactly what is included in the U.S.? Should residents of territories such as Puerto Rico be counted? What about overseas personnel and the military? There are a number of different census counts of the population of the 50 states; the population including overseas military, etc. The latter is the most realistic though it excludes U.S. citizens living in foreign countries who do not work for the U.S. government.

*A recent court decision ruled that "head counts" of the population were not sufficient; the Census Bureau must use statistical procedures to compensate for non-random undercounts. On the other hand, the House of Representatives has passed a bill that would order the Census Bureau to delete any illegal immigrants it may have included in the 1980 census.

In making projections of the population, a reasonably accurate and up-to-date base population must be selected. Generally the official count at the most recent census is used, but the necessary data from the 1980 census are not yet available. The Census Bureau's Series II estimate for July 1, 1980, which includes the population of the fifty states and the District of Columbia, together with overseas personnel, serves as a base upon which projections will be made. It assumes a slight increase in the total fertility rate from 1.8 to 2.1 live births per woman by the year 2000, some decline in mortality and net immigration of 400,000 annually. The July 1, 1980, base population, according to Series II, is 222,117,904.*

Assumptions

Projections are only as good as their assumptions. However, all projections are not necessarily intended to be accurate. It is sometimes valuable to see what would happen at some future date under certain circumstances—however unrealistic these may be. The length of time involved must also be considered. The longer the time span involved, the less reliable the projections.

Conceptually, the resident population of the United States as of July 1, 1980, is separated from the "immigrant" group that enters after July 1, 1980. These are not to be confused with native and foreign-born. The resident population includes both native-born persons and immigrants who entered the country prior to July 1, 1980. The "immigrant" group consists of all the immigrants who enter after July 1, 1980, *and their descendants*. By using this basic dichotomy we can determine the effect of immigration on the future size of the nation.

*The 1980 census enumerated 226,504,825 people. Thus, the Census Bureau's Series II estimate was over 4 million short. As a result, all projections in this report err on the low side. Proportional changes, however, are not affected.

Thus we use the terms "resident" and "immigrant" realizing that the terms imply "and their descendants."

Fertility: Fertility behavior is difficult to "predict." U.S. fertility recently reached an all-time low when the total fertility rate fell under 1.8 in 1978. It is now climbing just a bit. Some experts feel that fertility will increase substantially as those born in the small cohort of the 70s become adults and choose to have relatively large families. Most, however, are convinced that fertility will remain low for the foreseeable future. Non-economic changes in the society such as the emergence of the women's liberation movement, recent innovations in contraceptive technology, and the liberalization of abortion laws all suggest continued low fertility—possibly under replacement level for many years.

Three fertility alternatives are used in this report. The 2-child family is represented by a TFR of 2.0; a 10 percent reduction yields a TFR of 1.8; a 10 percent increase results in a TFR of 2.2. For the larger two, that level will be reached by 1985. The low assumption reflects the recent situation in the U.S. However, it is possible that fertility may increase slightly. A TFR of 2.0 may well be the most realistic. The high assumption sees fertility climbing substantially by 1985.

Fluctuations occur in the age-specific fertility rates that determine the total fertility rate. While such fluctuations could be included in the projections, they would serve little value and require yet another tenuous assumption. We have followed the lead of the Census Bureau and assume no change in fertility once a certain goal is attained, realizing that this does not purely reflect reality.

The fertility of the immigrant group and its descendants must also be projected. Recent surveys suggest that Hispanic-American women expect to have more children than native-born white women. According to the 1970 census, Mexican-born women aged 35-54 had about 4 children on the average compared to about 3 for the native-born white women.

Because of the uncertainty surrounding the fertility among immigrants, three alternative projections are used: (1) immigrants and residents have the same fertility; (2) immigrants average 2.4 children in 1980 and their fertility then gradually declines by .2 every five years until it reaches that of residents; (3) immigrant fertility remains at 2.4 children.

The mean age of childbearing (now about 26) determines the length of generation which in turn affects the intrinsic rate of growth. The age-specific birth rates are such that births are about equally divided between women 20-24 and 25-29—a slight change from the past when the 20-24 rate was higher than the 25-29 rate. We assume that the present pattern will remain relatively unchanged in the future. Any deviations from this pattern would not significantly affect the overall projections.

Mortality: Life expectancy has been climbing slightly in recent years. However, there are limits to such improvements. Census Bureau projections have generally been too conservative. Progress has been greater than anticipated. The most recent projections in 1977 assumed that life expectancy would increase from 69.1 to 71.8 for males and from 77.0 to 81.0 for females between 1976 and 2050. Progress has been such that by 1978, life expectancy was "ahead of the schedule" outlined in the Census Bureau model.

We have taken the survival rates calculated by the Census Bureau for 2050 (i.e. when life expectancy is projected to be 72 for males and 81 for females) and applied these to the year 2030. We further assume that the increase will be linear. For the second 50 years, we calculated the average annual rate of change in survival rates in the Bureau projections and applied that to the 2030 rates. Life expectancy in 2080 will thus be 74.5 for males and 85.0 for females, a not unreasonable assumption.

These are the same for both residents and immigrants.

Migration: By immigrants we mean all the foreign-born people who move to the U.S. with the intention of remaining here permanently. This includes permanent immigrants, refugees, and those seeking asylum, as well as any illegal immigrants—providing they meet the criterion of intending to remain here at least relatively permanently. By emigrants we mean all those residents of the U.S. (irrespective of legal or citizenship status) who leave the country with the intention of establishing a relatively permanent residence elsewhere. The projections deal with net immigration, that is immigration minus emigration.

We should be aware of the conceptual differences that arise between the Census Bureau and the Immigration and Naturalization Service (INS) with reference to "immigration." The Census Bureau is not concerned with immigration or emigration. Rather, its constitutional mandate is to count all the people who live in the U.S. In making intercensal estimates, it looks at the number of persons who enter and leave the country—irrespective of citizenship or nationality. A returning American is entering the country in the same way as a new immigrant or refugee, in the eyes of the Census Bureau. The INS is not involved with the number of people living in the U.S. Rather, its responsibility centers on immigration and naturalization of aliens. Returning citizens are not of major concern to the INS.

Thus while fertility and mortality are easily defined, immigration remains a problem—depending on which conceptual framework is followed. We must distinguish between net civilian immigration (the Census Bureau concept) and net alien immigration (the INS concept).

In this report net immigration is reserved for what Keely and Kraly call net alien immigration.[13] While the Census Bureau's conceptual framework is valid for its stated purposes, i.e., counting all the people, it is not appropriate for a paper dealing with the impact of immigration on the population of the U.S.

There is so little reliable information on total immigration and emigration that any assumptions as to future numbers are tenuous at best. One must also consider the impact of possible new legislation that might emanate from the recommendations of the Select Commission on Immigration and Refugee Policy.

The extent of immigration is at least theoretically determined by legislative/administrative action. While we cannot "control" fertility and mortality, we can presumably "control" the number of people who enter the country in any given year.

Five alternative net immigration patterns have been selected: 250,000, 500,000, 750,000, 1,000,000, and 2,000,000. As at least 100,000 people presently leave the country in any given year, the actual number of immigrants will in fact be somewhat larger than these estimates.

Variations in the age distribution of the immigrant population can yield differences in overall population size. If all immigrants were 20-24, equally distributed by sex, one could expect a greater numerical impact than if all immigrants were elderly. In reality, age composition is not expected to vary significantly. Nevertheless, specific assumptions must be made.

For this we must rely on published INS data on permanent immigration. The age composition of the net immigrant "group" is based on the age distribution of the immigrants admitted legally in FY 1977 (462,315) minus the emigrants (100,000) whose age distribution has been calculated by Warren and Peck and adjusted for this report.[14]

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Population Trends and Public Policy

Immigration and its Impact on U.S. Society

by Leon F. Bouvier

Population Reference Bureau, Inc.

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Immigration to the United States has reached levels not attained since early in this century. If both legal and illegal entries are included, close to half of all growth may be attributable to this demographic variable. Perhaps 1.25 million people immigrated in 1980 alone—800,000 of those legally. Clearly, immigration is worthy of serious consideration by policymakers and others concerned with the U.S. population of the future.

The first report in this series dealt with the numerical impact of immigration on the size of the U.S. population. It noted that "in determining future population size, the effect of fertility changes is stronger than that of migration changes."[1] If there is an increase of just 10 percent in the total fertility rate from 1.8 to 2.0 births per woman, for example, this will add 7 million people to the U.S. population in 20 years, 24 million in 50 years, and 50 million in 100 years. On the other hand, a 50 percent increase in net international migration* (from 500,000 to 750,000 for example)—holding fertility constant at 1.8—increases the size of the population by only 6 million in 20 years, 17 million in 50 years and 33 million in 100 years.

However, even if the level of immigration might be relatively small, it would represent a large *percentage* of the population growth that is taking place when fertility is low. For example, net migration of 500,000 per year represents 26 percent of all growth in the 1980 decade if the total fertility rate (TFR)** remains 1.8. "By the turn of the century about half of all growth will be attributable to net international migration and by 2020-2030, all growth will come from net international migration as births decline to the point that deaths exceed them."[2]

In sum, fertility *and* migration must be constantly monitored because both independently contribute to the future size of the U.S. population.

In this report, the impact of immigration on the ethnic composition, regional distribution, and age composition of the U.S. population will be analyzed. This will serve as a base upon which to study the demographic impact of immigration on school enrollment, the labor force, and the elderly population.

*International migration terminology is sometimes unclear. Net international migration refers to the difference between immigration and emigration. In the following report, all migration is assumed to be international, unless otherwise noted, and legal and illegal moves are grouped together.

**In the following report, the total fertility rate (TFR) is used to indicate levels of fertility. The TFR indicates how many live births a woman would have if throughout her reproductive years she bore children at the rates which women of all ages actually did bear children in a specific year.

Immigration and its Impact on U.S. Society, by Leon F. Bouvier, is the second report in the new series of occasional papers, *Population Trends and Public Policy*, published by the Population Reference Bureau, Inc. This series is devoted to the discussion of timely demographic or population issues that are of particular concern to the policymaker.

The author, Dr. Leon F. Bouvier, is Director of Demographic Research and Policy Analysis at PRB. He has previously served as demographic advisor to the International Statistical Programs Center of the U.S. Bureau of the Census, the Select Committee on Population of the U.S. House of Representatives, and, most recently, the U.S. Select Commission on Immigration and Refugee Policy.

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Immigration and its Impact on U.S. Society

Making assumptions about future immigration patterns is a tenuous business. Will the Congress institute major changes in U.S. immigration law, perhaps as a result of the recommendations of the Select Commission on Immigration and Refugee Policy or the President's Interdepartmental Task Force? Will the present system based on six preference categories remain relatively intact? Major legislative changes could affect both size and type of immigration. But regardless of policy direction, it seems safe to say that the U.S. will not return to a national quota system.

There are three types of legal immigrants: those who fall within the preference system; those exempt from numerical limitation; and refugees. The regulations are such that relatives of recent immigrants, citizens and resident aliens alike, are more likely to benefit from the present preference system than relatives of earlier immigrants. Inhabitants of European countries find it increasingly difficult to qualify—except under occupational preferences—simply because the number of U.S. residents of European extraction has fallen over the last few decades. Inhabitants of African countries find it almost impossible to immigrate due to the paucity of "sponsors" already residing in the U.S. In the two most widely used categories, 1979 figures show that 75 percent of all second preference entrants (spouses and unmarried sons and daughters of permanent resident aliens) and 67 percent of fifth preference entrants (brothers and sisters of U.S. citizens) came from Latin America and the Caribbean or Asia.

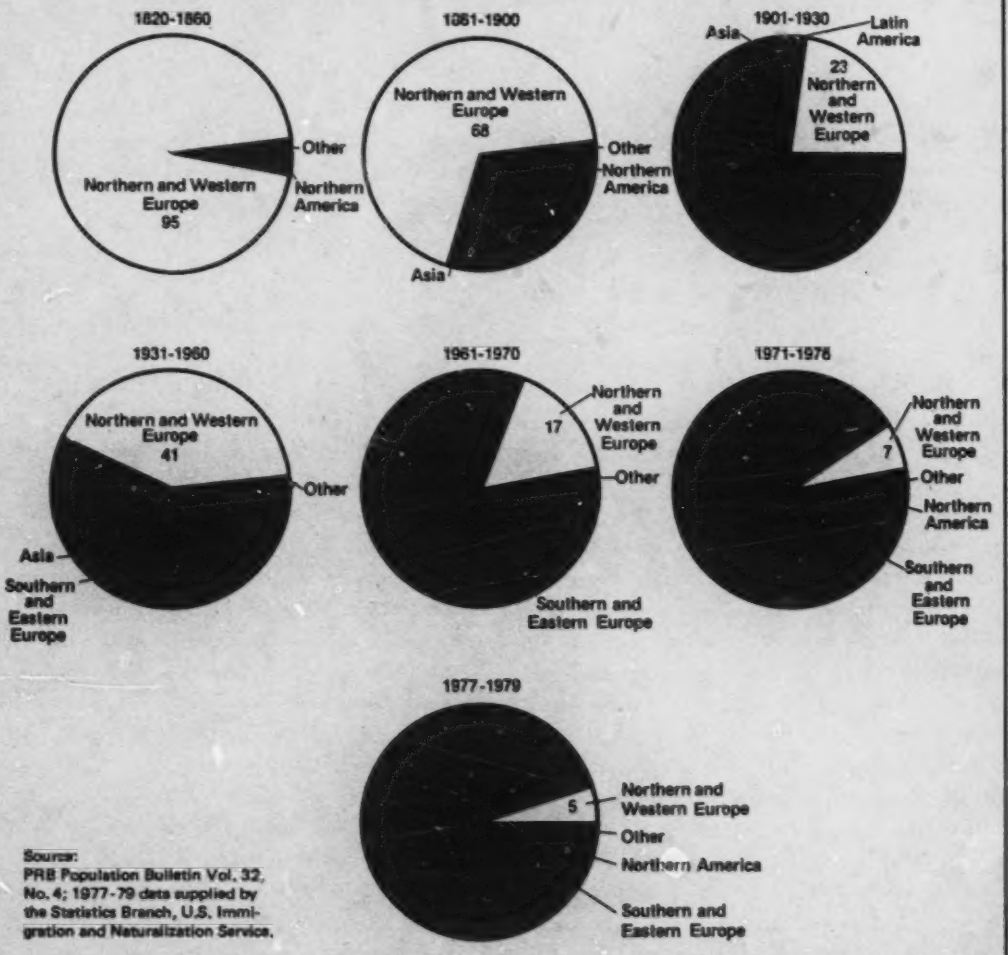
If the 1965 Immigration and Nationality Act amendments remain in effect, the number of immigrants entering the country exempt from numerical limitation will undoubtedly increase in future years—especially if overall immigration is relatively large. The law specifies that all immediate relatives of U.S. citizens (parents, spouses, and children) are admissible without limits on their numbers. For the 1969-1976 period, the number entering under this category averaged only 88,000 per year. In 1977, 111,555 persons entered (excluding Cuban immigrants). By 1979 the number had risen to 149,000.

Ethnic Composition

In recent years major changes have occurred in the proportional distribution of immigrants to the United States from different countries and regions of the world. The 19th and early 20th century pattern of immigration is familiar, in particular the changeover from predominantly Northwest European immigrants to those originating from Southeast Europe. The 1965 amendments to the Immigration and Nationality Act resulted in further changes in countries of origin. As Figure 1 shows, emphasis shifted from Northern and Western Europe to Southern and Eastern Europe, then to Latin America, and more recently to Asia. In 1977-1979, less than 6 percent of immigrants to the U.S. came from Northern and Western Europe. This is in stark contrast to the 1931-1960 period when 41 percent came from that region and only 20 percent came from Latin America, the Caribbean, Asia, and the Pacific Islands combined.

As people immigrate to the U.S. and as these immigrants become citizens, *their* immediate relatives, in turn, become eligible to join them in the United States if they so desire—all can enter with no numerical limitation. Asians and Latin Americans will no doubt predominate among those who enter outside the numerical limits for the foreseeable future, given the large number of immediate relatives already in the U.S. from those regions. In 1978, 36 percent of those entering outside numeri-

Figure 1. Immigrants Admitted to the U.S. by Region of Birth 1820 -1979



Source:
PRB Population Bulletin Vol. 32, No. 4; 1977-79 data supplied by the Statistics Branch, U.S. Immigration and Naturalization Service.

cal limits came from Asia, and 37 percent came from Latin America. Because Asians are more likely to opt for U.S. citizenship than Latin Americans, the proportion of Asians who attain sponsorship may well increase.

Refugees, numbering about 200,000 per year, now comprise a significant proportion of legal entrants. That level may well be maintained for the foreseeable future. While it is not possible to pinpoint future sources of refugee movements, it seems reasonable to suggest that most are likely to come from Southeast Asia and certain Caribbean and Latin American countries rather than from Western Europe. Perhaps African and Middle Eastern refugees will become more numerous and a small but steady refugee stream from Eastern Europe and the Soviet Union may continue. Nevertheless, the large majority will probably come

from Asia at least in the short run. The Office of the U.S. Coordinator for Refugee Affairs has allocated the following entry slots for fiscal year 1981: 168,000 for Indochina; 33,000 for the Soviet Union; 4,500 for Eastern Europe; 4,500 for the Near East; 4,000 for Latin America; and 3,000 for Africa.[3]

(Illegal immigration remains a thorny issue—simply because even rough estimates of the number of undocumented entries are not available. It is generally agreed that a substantial majority of illegal immigrants come from Mexico, Central America, and the Caribbean. Some entrants from Europe, Africa, and Asia do abuse their visa privileges, but the consensus is that at least half of all illegal immigrants are Mexicans and another large proportion come from the Dominican Republic, Haiti, Colombia, Jamaica, and El Salvador.)

Asia and Latin America should continue as dominant regions of origin in the future, insofar as that future can be "predicted." While there might be a tendency for legal entries from Asia to increase under certain preference categories, in general, the proportion of total immigrants originating in Latin America and the Caribbean may well experience the largest growth, in part because of illegal entries and in part due to the proximity of the area. For the purpose of this report, therefore, it is assumed that future net international migration to the U.S. will be subdivided into three categories as follows: Latin American/Caribbean (that is, all countries south of the Rio Grande including English, French, Dutch, Portuguese, as well as Spanish-speaking countries) 45 percent; Asian and Pacific Island countries 40 percent; all other countries 15 percent. (These proportions vary slightly from recent legal patterns.)

The future fertility behavior of immigrants, irrespective of region of origin, is assumed conservatively to be the same as that of the resident population of the U.S. Intermarriage between ethnic groups is not considered in these assumptions. This may result in an under-estimate of the impact of immigration on the U.S. population. While there is no substantial evidence suggesting high levels of fertility among Asian immigrants to the U.S., there is such evidence for Latin Americans, especially for Mexicans. However, among this group recent studies show fertility declining as education and length of stay in the U.S. increase.[4] To be both "conservative" and "expedient" the assumption is that both immigrants and residents will exhibit the same fertility as well as mortality behavior.

Given these assumptions, and turning to findings from the earlier report in this series, "The Impact of Immigration on U.S. Population Size," the total future population of the U.S. attributable to immigration (that is, post-1980 immigrants and their descendants) is illustrated in Table 1, according to different fertility assumptions and net international migration to the U.S. of 500,000 persons annually. In 50 years, for example, if U.S. fertility remains at 1.8, of the 32,768,000 immigrants and their descendants in the population, 13,107,000 will be Asian, 14,746,000 Latin American, and 4,915,000 will have emigrated from other parts of the world.

Review of Assumptions

The following is a review of the assumptions used for the projections in this report:

The ethnic composition of the future immigrant population will be 45 percent Latin American, 40 percent Asian, 15 percent other nationalities.

No intermarriage between ethnic groups is considered.

The fertility of all groups—immigrant and resident—is the same.

Emigration is proportionately the same for all groups.

The regional distribution of the future immigrant population will be the same as that noted for those entering the country legally in 1978.

Net internal migration between states is the same as noted between 1970-75 as calculated by the Census Bureau and extended only to the year 2000.

The age distribution of immigrants is assumed to be the same as that for legal immigrants who entered the U.S. in 1978. No attempt is made to take account of any differences in age composition between ethnic groups.

TABLE 1

Number of Post-1980 Immigrants and Descendants in Total Population, 2000-2080, Assuming Annual Net International Migration of 500,000,* By Total Fertility Rate and Region of Origin (in 1,000s)

Total Fertility Rate	Year 2000			2030			2080		
	Asian[1]	Latin American[2]	Other[3]	Asian	Latin American	Other	Asian	Latin American	Other
1.8	4,690	5,276	1,759	13,107	14,746	4,915	26,646	29,976	9,992
2.0	4,776	5,373	1,791	13,705	15,418	5,139	29,710	33,424	11,141
2.2	4,870	5,478	1,826	14,340	16,189	5,396	33,553	37,747	12,582

*The selection of 500,000 is for illustrative purposes only.
[1]In this and the following tables, "Asian" includes persons from the continent of Asia and the Pacific Islands.
[2]"Latin American" includes persons from countries in all of the Americas except the U.S., Canada, and Greenland.
[3]"Other" refers to immigrants from the rest of the world, but mainly Europe and Canada.

Regional Distribution

The destination of immigrants to the U.S. often depends on the residence of relatives, friends, or members of the same ethnic group, and other factors. Cubans settle predominantly in Florida; Mexicans usually select Texas first; Dominicans choose New York; and Filipinos and Koreans are more likely to live in California than in any other state, although Korean immigrants are more dispersed than the Filipinos.

Two basic sources of data allow tentative estimates of the regional distribution of the immigrant population: the declaration of intended residence to the Immigration and Naturalization Service by new arrivals; and the U.S. Census which asks all respondents their place of birth and where they resided five years previously.* The census makes it possible to determine the proportion of foreign-born persons living abroad five years before each enumeration according to specific region and state of residence at census time. These two methods show a similar distribution of residence by state, as seen in Table 2. (The INS data indicate an especially high proportion of immigrants in the South because they reflect an adjustment in the classification of previous Cuban entrants from refugee to immigrant status.)

For this report, it is assumed that the three major ethnic categories of immigrants will select their intended place of residence in the same proportion as did immigrants entering the country in 1978. For example, 31.5 percent of all Asians entering the U.S. in that year settled in California. If it is assumed that total net international migration for any specific year is 500,000, then 40 percent (or 200,000) of these persons would be Asians, of whom 63,000 (or 31.5 percent) would choose to live in California. To complete the example, 28 percent of Latin American immigrants would select California. Thus, of the 225,000 Latin American arrivals (45 percent of 500,000) 63,000 (by coincidence) would also settle in California. Of the 75,000 immigrants from other areas—mostly Europe, Canada, and Australia—about 14 percent (10,500) would go to California, following the patterns in 1978.

*The alien registration system, which gives some indication of current residence for those who file, is a third source of information.

TABLE 2

Percent Distribution of Immigrants by Regions and Selected States

	Residence According to 1970 Census	Intended Residence Declaration of New Arrivals, I.N.S. 1978
Regions		
Northeast	36.0	30.2
North Central	16.3	13.6
South	16.5	24.0
West	31.2	32.2
Selected States*		
California	24.1	24.7
Florida	2.0	6.6
Illinois	6.5	5.7
New York	18.0	17.1
Texas	5.2	7.9

*These are the five states having the largest number of immigrant entries in 1978.
Source: U.S. Bureau of the Census, "Illustrative Projections of State Population by Age, Race, and Sex, 1975 to 2000," *Current Population Reports*, No. 798, 1977, p. 25, Table A-7; Unpublished data, Immigration and Naturalization Service, 1980.

Table 3 indicates the distribution of immigrants in the three ethnic categories by region and selected state of residence. Asians are much more likely to live in the West than elsewhere; Latin Americans are more equally distributed, with the West being slightly more favored than the Northeast and the South. Other immigrants, mainly persons of European birth, are more apt to select the Northeast than any other region. The north central region is the least likely recipient of immigrants.

California is by far the favorite state of residence for Asians. Among Latin Americans, California ranks first with New York second, followed by Texas and Florida. Together these four states are the intended residence of three-quarters of all Latin American or Caribbean immigrants. Those coming from the rest of the world select New York first with California being almost as popular.

Under these assumptions, the western region will receive about 35 percent of all immigrants in future years; 29.5 percent will go to the Northeast; 23 percent to the South; and 12.5 percent to the north central region. California, followed by New York, will be the state attracting the most immigrants.

Beyond the annual flow of immigrants, it is also possible to project the future residence of post-1980 immigrants and their descendants. Assuming no major internal movements among immigrants, a total fertility rate of 1.8 equal to the U.S. rate for all ethnic groups, and annual net international migration of 500,000, the number of immigrants and their descendants residing in the United States would grow to 11,725,000 by the year 2000. As Table 1 indicated, Asians would number 4,690,000; 5,276,250 would be Latin Americans; and 1,758,750 "Others." Table 4 shows how post-1980 immigrants and their descendants would be divided among regions and selected states in future years, given different levels of fertility for the U.S. population as a whole. As noted in Table 3, California receives 31.5 percent of all Asian immigrants, 28.4 percent of all Latin Americans, and 13.8 percent of other immigrants. California's portion of the 11,725,000 immigrants and their descendants in the year 2000 amounts to 1,477,350 Asians, 1,498,500 Latin Americans, and 242,650 persons of other backgrounds. The state's total would be 3,218,500, or 27.4 percent of all post-1980 immi-

TABLE 3

Percent Distribution of Immigrant Groups by Regions and Selected States Based on Intended Residence, 1978

Intended Residence	Region of Origin			
	Asian	Latin American	Other	Total
Regions				
Northeast	25.3	28.4	44.0	29.5
North Central	17.0	8.1	13.8	12.5
South	15.1	30.8	20.7	23.0
West	42.6	32.7	21.5	35.0
Selected States				
California	31.5	28.4	13.8	27.4
Florida	0.7	13.2	8.4	8.0
Illinois	7.7	6.1	4.1	6.5
New York	11.6	19.0	17.3	16.0
Texas	3.5	15.0	3.7	9.0

Source: Unpublished data, Immigration and Naturalization Service, 1980.

grants and their descendants in the U.S. population in the year 2000.

What will be the impact of these numbers? What proportion will post-1980 immigrants and their children comprise in the future U.S. population and in regional and state populations?* Moving to the assumption that annual net migration will be 1 million (a figure that more closely resembles the current flow of immigrants including illegal entries) and given continued low fertility (TFR = 1.8), 8.8 percent of the population in 2000 would be post-1980 immigrants and their descendants. That proportion would increase over time to 21.1 percent in 2030, 29.2 percent in 2050, and 39.8 percent in 2080.[5]

Irrespective of its dimensions, or the country's future fertility patterns, immigration will have a vastly different impact on diverse parts of the country. Looking at the year 2000, assuming net migration of 1 million and a TFR of 1.8, the proportion of post-1980 immigrants and their descendants would be greater in the West than elsewhere, comprising 15 percent of the population in that region. On the other hand, little impact would be noted in the north central region. The impact on the Northeast, like the West, would be considerable as the proportion of post-1980 immigrants and their descendants climbs to 12.5, well above the national proportion of 8 percent. California would be particularly affected by immigration in future years; almost 21 percent of its population would be post-

*In making estimates of the proportion of post-1980 immigrants and their descendants in states and regions, internal migration must be considered as well as fertility and mortality. The U.S. Census Bureau has developed projections of the population by state and region to the year 2000. Such projections make assumptions about fertility, mortality, and both internal and international migration. However, international migration is not separable from the other variables. The Census Bureau's Series II-B assumes a continuation of the interstate migration pattern for the years 1970-75,and this assumption is used in this report.

The methodology used for this portion of the study involves determining the region or state population assuming no immigration as estimated by the Census Bureau for the year 2000, developing a comparable estimate for this report, and then adding the immigration that has been allocated to specific states and regions.

Projections beyond the turn of the century assume no further change in internal migration. That is to say, the distribution of the population by region and state remains unchanged from that noted for the hypothetical no-immigration population of 2000.

TABLE 4

Number of Post-1980 Immigrants and Descendants in Regions and Selected States, By U.S. Total Fertility Rate, 2000-2080 (in 1,000s) (Annual Net International Migration = 500,000)*

Residence	Year 2000 Asian	2000 Latin American	2000 Other	2030 Asian	2030 Latin American	2030 Other	2080 Asian	2080 Latin American	2080 Other
TFR 1.8									
Northeast	1,187	1,498	774	3,316	4,188	2,162	6,741	8,513	4,396
New York	544	1,002	304	1,520	2,802	850	3,091	5,695	1,729
North Central	797	427	243	2,228	1,194	678	4,530	2,428	1,379
Illinois	361	322	72	1,009	899	201	2,052	1,828	410
South	708	1,625	364	1,979	4,542	1,017	4,023	9,233	2,068
Florida	33	696	148	92	1,946	413	186	3,957	839
Texas	164	791	65	459	2,212	182	933	4,496	370
West	1,998	1,725	378	5,584	4,822	1,057	11,351	9,802	2,148
California	1,477	1,498	243	4,129	4,188	678	8,393	8,513	1,379
TFR 2.0									
Northeast	1,208	1,526	788	3,467	4,379	2,261	7,517	9,492	4,902
New York	554	1,021	310	1,589	2,929	889	3,446	6,351	1,927
North Central	812	435	247	2,330	1,249	709	5,051	2,707	1,537
Illinois	368	328	73	1,055	940	211	2,288	2,039	457
South	721	1,655	371	2,069	4,749	1,064	4,486	10,295	2,306
Florida	33	709	150	96	2,035	432	208	4,412	936
Texas	167	805	66	480	2,313	190	1,040	5,014	412
West	2,036	1,757	385	5,838	5,042	1,105	12,656	10,929	2,395
California	1,504	1,526	247	4,317	4,379	709	9,359	9,492	1,537
TFR 2.2									
Northeast	1,232	1,556	803	3,641	4,598	2,374	8,489	10,720	5,536
New York	565	1,041	316	1,669	3,076	933	3,892	7,172	2,177
North Central	828	444	252	2,446	1,311	745	5,704	3,057	1,736
Illinois	375	334	75	1,108	987	221	2,584	2,303	516
South	735	1,687	378	2,173	4,986	1,117	5,066	11,626	2,604
Florida	34	723	153	101	2,137	453	235	4,983	1,057
Texas	170	822	68	504	2,428	200	1,174	5,662	465
West	2,075	1,791	393	6,130	5,294	1,160	14,294	12,343	2,705
California	1,534	1,555	252	4,533	4,598	745	10,569	10,720	1,736

*Only the projection for net international migration of 500,000 is shown. To determine the number of persons in a particular ethnic group or in a particular region under other immigration assumptions, divide the specific annual immigration assumed by 500,000 and multiply the immigrant total shown in the Table by that factor.

1980 immigrants and their descendants in the year 2000. New York, too, would experience large increases in the proportion living there, which could reach 19 percent by the year 2000.

With continued low fertility, the proportion of post-1980 immigrants and their descendants would grow substantially over time. Assuming a TFR of 1.8 and 500,000 immigrants per year, Figure 2

TABLE 5

Projected Regional and Selected State Populations, 2000-2080, And Percent Post-1980 Immigrants and Descendants by Total Fertility Rate and Annual Net International Migration (in 1,000s)

Net Migration and Fertility	Year 2000 Total Population	2000 Percent Attributable to Immigration	2030 Total Population	2030 Percent Attributable to Immigration	2080 Total Population	2080 Percent Attributable to Immigration
NORTHEAST						
500,000 Net Migration						
TFR 1.8	51,782	6.8	58,144	16.6	59,561	33.0
TFR 2.0	53,187	6.6	63,131	16.0	73,547	29.8
TFR 2.2	54,702	6.5	69,025	15.4	92,316	26.8
1,000,000 Net Migration						
TFR 1.8	55,245	12.5	67,810	28.5	79,212	49.3
TFR 2.0	56,686	12.4	73,238	27.6	95,458	45.9
TFR 2.2	58,232	12.3	79,638	26.6	117,061	42.3
NORTH CENTRAL						
500,000 Net Migration						
TFR 1.8	61,600	2.4	64,570	6.3	58,113	14.3
TFR 2.0	63,290	2.4	70,429	6.1	73,700	12.6
TFR 2.2	65,141	2.3	77,364	5.8	94,778	11.1
1,000,000 Net Migration						
TFR 1.8	63,080	4.6	68,666	11.9	66,440	25.1
TFR 2.0	64,782	4.6	74,712	11.5	82,985	22.4
TFR 2.2	66,581	4.6	81,861	11.0	105,263	19.9
SOUTH						
500,000 Net Migration						
TFR 1.8	91,220	3.0	96,412	7.8	88,489	17.3
TFR 2.0	93,680	2.9	105,090	7.5	111,750	15.3
TFR 2.2	96,388	2.9	115,363	7.2	143,172	13.5
1,000,000 Net Migration						
TFR 1.8	93,898	5.7	103,948	14.5	103,810	29.5
TFR 2.0	96,420	5.7	112,970	14.0	128,833	26.5
TFR 2.2	99,114	5.6	123,637	13.4	162,466	23.7
WEST						
500,000 Net Migration						
TFR 1.8	50,800	8.2	58,477	19.6	62,015	37.6
TFR 2.0	52,160	8.0	63,409	18.9	76,069	34.2
TFR 2.2	53,665	7.9	69,234	18.2	94,882	30.9
1,000,000 Net Migration						
TFR 1.8	54,904	14.9	69,947	32.8	85,330	54.6
TFR 2.0	56,338	14.8	75,401	31.8	102,066	50.9
TFR 2.2	57,843	14.7	81,826	30.8	124,248	47.3

TABLE 5 *(Continued)*

Net Migration and Fertility	Year 2000 Total Population	2000 Percent Attributable to Immigration	2030 Total Population	2030 Percent Attributable to Immigration	2080 Total Population	2080 Percent Attributable to Immigration
			NEW YORK			
500,000 Net Migration						
TFR 1.8	17,715	10.6	21,157	24.8	23,759	44.1
TFR 2.0	18,183	10.5	22,888	24.0	28,835	41.2
TFR 2.2	18,700	10.4	24,932	23.1	35,603	37.7
1,000,000 Net Migration						
TFR 1.8	19,591	19.1	26,400	39.7	34,417	61.9
TFR 2.0	20,093	19.0	28,370	38.6	40,719	58.4
TFR 2.2	20,648	18.9	30,688	37.5	49,024	54.7
			ILLINOIS			
500,000 Net Migration						
TFR 1.8	11,727	6.5	13,148	16.2	13,400	32.3
TFR 2.0	12,042	6.4	14,278	15.6	16,464	29.1
TFR 2.2	12,388	6.4	15,613	15.0	20,809	26.2
1,000,000 Net Migration						
TFR 1.8	12,489	12.2	15,278	27.9	17,730	48.8
TFR 2.0	12,818	12.1	16,505	27.0	21,392	45.1
TFR 2.2	13,180	12.0	17,952	26.0	26,621	41.5
			FLORIDA			
500,000 Net Migration						
TFR 1.8	14,828	6.3	16,577	15.8	16,818	31.7
TFR 2.0	15,224	6.3	18,005	15.2	20,807	28.6
TFR 2.2	15,664	6.2	19,694	14.6	26,163	25.6
1,000,000 Net Migration						
TFR 1.8	15,766	11.9	19,199	27.3	22,147	48.1
TFR 2.0	16,179	11.8	20,746	26.4	26,749	44.9
TFR 2.2	16,638	11.7	22,572	25.5	32,874	40.8
			TEXAS			
500,000 Net Migration						
TFR 1.8	17,381	6.1	19,353	15.2	19,500	30.7
TFR 2.0	17,847	6.0	21,026	14.7	24,158	27.7
TFR 2.2	18,363	6.0	23,004	14.1	30,414	24.8
1,000,000 Net Migration						
TFR 1.8	18,436	11.4	22,302	26.4	25,495	47.0
TFR 2.0	18,922	11.4	24,109	25.6	30,843	43.3
TFR 2.2	19,458	11.3	26,242	24.7	37,963	39.8
			CALIFORNIA			
500,000 Net Migration						
TFR 1.8	27,581	11.6	33,461	26.8	38,408	47.5
TFR 2.0	28,306	11.6	36,168	26.0	46,356	43.7
TFR 2.2	29,108	11.5	39,358	25.0	57,111	40.2
1,000,000 Net Migration						
TFR 1.8	30,793	20.9	42,440	42.3	56,660	64.4
TFR 2.0	31,578	20.7	45,556	41.2	66,633	60.9
TFR 2.2	32,443	20.6	49,216	40.1	80,095	57.4

illustrates the cumulative increase in the proportion of post-1980 immigrants and their descendents for selected states and regions. Should fertility rise, these proportions would diminish, as Table 5 shows.

Age Composition

Age composition, although sometimes ignored by analysts, has an important impact on future fertility, mortality, and population growth itself. Everything else being equal, a "young" population grows more rapidly than an "old" population. With or without immigration, the age distribution of the United States will change drastically over the next 50 years, mainly because of the recent upheavals in fertility: low fertility in the 1930s, the post-World War II "baby boom," and now the lowest fertility period in U.S. history—the "baby bust" of the 1970s to the present. (Fertility differences between the baby boom and baby bust periods are striking. In the 1955-64 decade, 43 million births took place, while in 1970-79 only 33 million occurred.) Clearly, fluctuations in age composition will occur independently of international migration. Nevertheless, different levels of immigration will contribute to a limited extent to changes in future age composition. The impact is dependent not only on the volume of immigration but on the age composition of the immigrant group itself.*

Because of its age structure, immigration, at whatever level, retards the "aging" of the U.S. population, but only to a slight degree. This reflects the fact that the immigrant group is "younger" than the resident population. Indeed, only 0.2 percent of immigrants are 65 and over while 77.4 percent are 15-64, and 22.4 percent are under 15. However, the U.S. fertility rate has a more powerful impact on the country's age composition than does immigration, as illustrated in Table 6.

Low fertility in the U.S. has been contributing to an increase in the median age of the U.S. population for the past two decades. This aging process will continue for the foreseeable future, but could be slowed down, if there is an increase in fertility, while immigration will continue to exert only a slight influence. For example, if net migration is held constant at 500,000 and fertility remains low at 1.8 children per woman, the median age of the population in 2030 will be 41.4 (compared to 30 today). Should fertility increase to 2.2, the median age of the population in 2030 would be 36.7—a difference of 4.7 years. However, if fertility is held constant at 1.8, the median age of the population in 2030 would only vary from 42.4 without immigration to 40.6 with annual net immigration of 1 million—a difference of only 1.8 years.

Reflecting the slight impact immigration has on median age, similarly small variations are noted in percent distribution of the population by age. The proportion of the total population at younger age levels is slightly higher with immigration than without, regardless of the fertility level. But overall, fertility has a much greater impact on the proportional age distribution of the population. With no immigration, 54.8 percent of the U.S. population will be in the 20-64 age group in 2030, assuming continued low fertility. A net annual influx of 1 million immigrants would only change that proportion to 56.8 percent.

With 43 percent of immigrants assumed to fall between the ages of 25 and 34, such relatively large numbers do have an impact on that age group. For example, with low fertility and no new immigrants, the percent aged 25-34 in the 1990 population would be a high 17.3, reflecting the high fertility of 1955-64. That proportion would be increased to 17.9 percent by net migration of 1 million per year (434,000 of whom would be aged 25-34). As the baby bust cohort of the 70s reaches ages 25-34 in 2005, this group would represent only 12.8 percent of the total population if no immigration occurred, and 13.4 percent if net migration totalled 1 million a year.

*The projections in this report assume the same age distribution that characterized legal immigrants entering the U.S. in 1978. *Illegal immigration and refugee movements are not considered* in the data upon which these assumptions are derived.

Figure 2. Post-1980 Immigrants and Descendants as a Percent of Regional and State Populations, Cumulative Increase, 2000, 2030, 2080

(NET INTERNATIONAL MIGRATION OF 500,000)

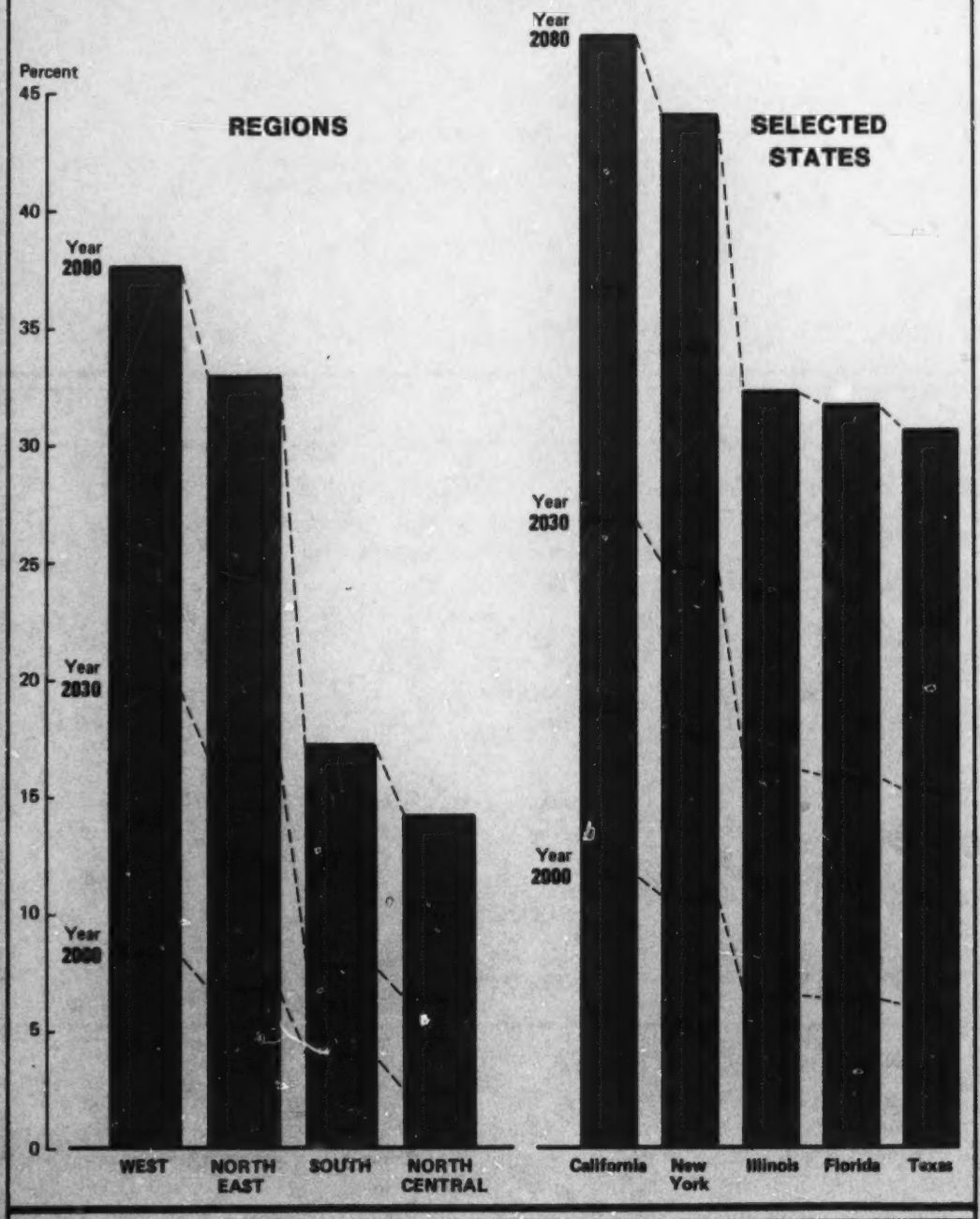


TABLE 6

Median Age of U.S. Population by Total Fertility Rate and Annual Net International Migration, 2000-2080

Total Fertility Rate	Year			
	2000	2030	2050	2080
	ANNUAL NET MIGRATION = 0			
1.8	36.8	42.4	43.4	44.6
2.0	36.0	39.9	40.2	41.2
2.2	35.1	37.1	37.2	38.0
	ANNUAL NET MIGRATION = 500,000			
1.8	36.4	41.4	42.1	43.1
2.0	35.6	39.1	39.4	40.3
2.2	34.7	36.7	36.7	37.4

TABLE 7

Projected U.S. Population, 2030, by Age, Total Fertility Rate and Annual Net International Migration

Total Fertility Rate	Level of Annual Net Migration				
	No Migration	250,000	500,000	750,000	1,000,000
	POPULATION AGED 0-19				
1.8	57,026	59,783	64,304	68,824	73,345
2.0	67,389	72,564	77,458	82,490	87,521
2.2	82,324	87,651	93,585	99,214	104,845
	POPULATION AGED 20-64				
1.8	134,155	146,018	156,117	166,218	176,317
2.0	146,754	156,946	167,419	177,755	188,091
2.2	159,032	169,626	180,219	190,815	201,408
	POPULATION AGED 65+				
*	53,654	55,418	57,182	58,945	60,709

*Fertility differentials do not affect the size of the elderly population in 2030.

Although the effect on median age and age distribution is minimal, the numerical impact of immigration on population size should not be overlooked. Adding 500,000, or 750,000, or 1 million people each year is significant.

Total population is 13.4 percent larger in 2030 with net international migration of 500,000 per year than it would be with no immigration. A half million immigrants per year would amount to a 17.3 percent increase of persons aged 25 to 29 in

the total population, but only an 8.5 percent increase among those aged 65-69. The numerical impact of immigration is greater in the younger ages, although it can be felt through all stages of the life cycle.

Immigration also has a marginal effect on the "dependency ratio," as shown in Table 7. In 2030 with fertility assumed to be 1.8, a net migration rate of 1 million per year would add 65 million to total population size, but this number would not be proportionately distributed. Immigration would add more persons to the working age population, 20-64, than would be expected proportionally and fewer to the "dependent" population aged 65 and over or under 20. Because immigrants are somewhat more likely to fall in the 20-64 age group than the resident population, the greater their number, the lower the dependency ratio.

While the impact of immigration on the age distribution is not great, the sheer numbers being added necessarily are significant, particularly in certain age categories, and thus have an effect on various social institutions.

Social Institutions

The School

In recent years, enrollment in U.S. schools has declined as the baby boom generation finished its schooling and was replaced by the baby bust generation of the late sixties and seventies. Total school enrollment (nursery school through college) fell every year since 1975, and enrollment in 1979 was lower than at any time since 1965.

Elementary school enrollment peaked in 1970 at 33,950,000 and has fallen steadily, reaching 27,865,000 in 1979. The secondary school pattern of decline is more recent, peaking in 1977 at 15,171,000 and falling ever since. All indications are that high school enrollment in the 1980s will follow the trend already experienced by elementary schools in the 1970s—that is, continued decline.

College enrollment has remained fairly stable at about 10 million since 1974, but may begin to decline in the mid-to-late 1980s. However, while al-

TABLE 8

Projected U.S. Population Aged 5-19, 2000-2080, by Total Fertility Rate and Annual Net International Migration (in 1,000s)

Fertility and Net International Migration	Year		
	2000	2030	2080
TFR 1.8			
No Migration	50,415	42,096	32,693
500,000	53,254	48,897	44,965
1,000,000	56,094	55,697	57,238
TFR 2.0			
No Migration	55,453	50,935	47,442
500,000	58,415	58,447	62,185
1,000,000	61,381	65,948	76,923
TFR 2.2			
No Migration	61,002	61,737	69,076
500,000	64,103	70,049	87,010
1,000,000	67,203	78,360	104,946

most everyone attends elementary and secondary schools, the proportion continuing to college is dependent on social and economic as well as demographic factors. The future direction of college enrollment is more difficult to forecast.

Current projections see little growth in school enrollment over the next 50 years. Enrollment could decline as a result of a combination of continued low fertility and moderate levels of net international migration (500,000-750,000 a year). This, of course, reflects the continued low fertility of the past decade extended into the future. Immigration will simply slow down the process of declining enrollment, and, if sufficiently large, may end it completely.

Without immigration, the number of people aged 5-19 will fall drastically over the next century if fertility remains low. Indeed, the number will fall from 54 million in 1980 to 33 million in 2080. Even if fertility climbs to 2.0 that population will drop to 47 million in 2080 after peaking at 55 million in 2000. A substantial rise in fertility would be needed for the number of people aged 5-19 to increase over the next century.

Should fertility remain at 1.8, net migration would have to reach 1 million per year to result in larger numbers of people of school age. By 2080, the 5-19 age group would still only be 3 million larger than it is at present. Limiting net migration to 500,000, on the other hand, would result in a slight decline in the population aged 5-19 over the next 100 years.

Should fertility increase slightly to 2.0, net migration of 500,000 annually would result in only 4 million additional people aged 5-19 in 2030; after that year, growth would increase at a more rapid rate with the population in that age group reaching 62 million in 2080. Immigration at higher levels means larger numbers in future years. With fertility above the replacement level of 2.1 births per woman, immigration simply would add more numbers to an already large total. For example, with net international migration of 1 million per year and a TFR of 2.2, the population 5-19 would almost double over the next century to 105 million. (See Table 8 for population aged 5-19 by net international migration level and fertility rate).

As noted earlier, changes in *fertility* lead to major changes in the size of the population; the level of immigration simply increases the number somewhat. However, under low fertility assumptions, moderate levels of immigration result in a stabilization of the 5-19 population at approximately 55-60 million, instead of allowing the number to fall continuously.

More important for policymaking than sheer numbers of people is the level of school enrollment resulting from different levels of fertility and immigration in future years. How much larger or smaller will school enrollment be than at present? How many immigrants and their descendants will be enrolled in school in 2000? in 2080?*

Assuming that low fertility rates (1.8) persist, without any immigration, total school enrollment from elementary school through college will experience a 43 percent drop over the next century—from 58 to 33 million students. (See Table 9 for detailed enrollment projections for elementary, secondary, and post-secondary schools.) This drop will be most severe at the elementary level where enrollment will have declined by approximately 9 million students. A 7 million drop in high school enrollment and a 5.5 million decline in college enrollment is projected.

Should net international migration average 500,000 a year, with the same low fertility rate persisting, the overall number of students would still decrease somewhat over the next century. The total number of students would be approximately 46 million in the year 2080. Elementary school enrollment would about equal the present total, but both secondary and post-secondary enrollment levels would fall.

With very low fertility it would require close to 1 million immigrants per year to assure that the total

*The proportion of people in each age group enrolled in school is assumed to remain unchanged from 1979 and is the same for both "residents" and "immigrants." While the age boundaries are approximate, for the purpose of this report school enrollment is divided into three levels: elementary (ages 5-13); secondary (ages 14-17); and post-secondary or college (ages 18-24).

TABLE 9

Projected School Enrollment, 2000-2080, by Total Fertility Rate and Annual Net International Migration (in 1,000s)

Fertility and Net International Migration	Year 2000	2030	2080
ELEMENTARY SCHOOL			
TFR 1.8			
No Migration	29,252	24,417	19,069
500,000	30,971	28,436	26,274
1,000,000	32,690	32,429	33,472
TFR 2.0			
No Migration	32,175	29,760	27,964
500,000	33,993	34,223	36,691
1,000,000	35,812	38,686	45,418
TFR 2.2			
No Migration	35,394	36,318	41,115
500,000	37,322	41,312	51,819
1,000,000	39,249	46,306	62,560
SECONDARY SCHOOL			
TFR 1.8			
No Migration	12,906	10,764	8,289
500,000	13,591	12,467	11,385
1,000,000	14,277	14,167	14,477
TFR 2.0			
No Migration	14,195	12,908	11,879
500,000	14,898	14,762	15,545
1,000,000	15,600	16,615	19,211
TFR 2.2			
No Migration	15,616	15,498	17,066
500,000	16,336	17,525	21,470
1,000,000	17,057	19,551	25,873
COLLEGE			
TFR 1.8			
No Migration	6,517	5,731	4,438
500,000	6,882	6,645	6,097
1,000,000	7,248	7,558	7,756
TFR 2.0			
No Migration	6,827	6,771	6,260
500,000	7,196	7,750	8,199
1,000,000	7,564	8,730	10,137
TFR 2.2			
No Migration	7,170	8,014	8,858
500,000	7,541	9,069	11,152
1,000,000	7,912	10,123	13,446

number of people enrolled in school in 2080 would be about the same as at present.

Even if the total fertility rate increased to 2.0, school enrollment would still decline over the next 100 years without the influence of immigration. If we couple this increase in fertility with annual net international migration of 500,000, enrollment begins to exceed present numbers soon after the turn

of the century. By 2030, total school enrollment approaches 60 million and by 2080 it adds up to 63 million. Higher levels of immigration would of course result in even greater numbers of students over the next century. For example, 1 million immigrants per year would mean 78 million students in 2080 or a 41 percent increase over current enrollment.

With the total fertility rate at 2.2 school enrollment will not decline, even without immigration. On the contrary, the number will rise to 60 million in just 19 years and to 71 million in 100 years. The impact of 1 million immigrants annually would be a dramatic increase in school enrollment to 107 million in 2080.

These figures show that in conjunction with very low fertility, net international migration at an annual level of 1 million does not contribute to any significant increase over the current level of school enrollment. If fertility should rise to 2.0, immigration levels would have to be at least 500,000 a year to cause significant growth in the school population from present levels. It is not until immigration is coupled with above–replacement level fertility that school enrollment begins to increase dramatically to the point of doubling the present day school population.

Table 10 illustrates the number of *additional* students enrolled over time as a result of different immigration levels. Regardless of the level of fertility, immigration will result in millions of additional children entering the U.S. school system, with that impact growing over time. Net international migration of 1 million a year would result in about 3.5-4 million additional elementary school students, about 1.4 million additional secondary school students, and 750,000 more college students by the year 2000 than would be the case if there was no immigration to the United States during the next 20 years. Within 50 years, between 8-10 million elementary school students, about 4 million high school students, and 2 million college students would be added. That number would grow substantially in the following 50 years to a possible overall total of 35 million more students than would be found if no immigration occurred, or 17 million more than if net migration were limited to 500,000 per year. With fertility remaining at 1.8 and immigration averaging 1 million per year, in 2000, 10.5 percent of the elementary school population will consist of 1980 immigrants and their descendants; in 2030 it will be 25 percent; in 2080 the amount will grow to 43 percent. Similar changes can be anticipated for the other grades.

While moderate levels of immigration could maintain the present size of the U.S. school population, continued low fertility will insure that school enrollment does not grow substantially from what it is today. The decline in educational expenditure brought on by a shrinking school-age population has been anticipated by some policymakers as an antidote to the problem of maintaining adequate services for the growing number of elderly early in the next century.

School enrollment in states and regions receiving a disproportionately large number of immigrants will experience the greatest impact on available resources. The proportional distribution of post-1980 immigrants and their descendants in Table 3 can be applied to the projected total number of future students to obtain a clearer picture of the impact of the number of immigrants and their descendants on schools in certain regions. These projections will affect decisions about bilingual education and other educational needs peculiar to the immigrant community. The demographic data described here should also serve as a base for further discussion by economists, sociologists, planners, and others who are interested in evaluating the effects of student enrollment on the economy, the community, and the individual educational institutions concerned.

The Labor Force

The labor force* is the principal channel through which population changes transmit their effects to the economy at large, since the size, growth, and composition of the labor force are closely related to

*The labor force includes all those who are employed or actively seeking employment.

TABLE 10

Projected School Enrollment Attributable to Annual Net International Migration, 2000-2080, by Total Fertility Rate And Annual Net International Migration (in 1,000s)

Fertility and Net International Migration	Year 2000	2030	2080
	ELEMENTARY SCHOOL		
TFR 1.8			
500,000	1,719	4,010	7,205
750,000	2,578	6,009	10,804
1,000,000	3,438	8,020	14,403
TFR 2.0			
500,000	1,818	4,463	8,727
750,000	2,727	6,694	13,090
1,000,000	3,636	8,926	17,454
TFR 2.2			
500,000	1,928	4,994	10,704
750,000	2,892	7,491	16,084
1,000,000	3,855	9,988	21,410
	SECONDARY SCHOOL		
TFR 1.8			
500,000	685	1,702	3,095
750,000	1,028	2,555	4,642
1,000,000	1,370	3,404	6,190
TFR 2.0			
500,000	702	1,854	3,665
750,000	1,053	2,781	5,499
1,000,000	1,404	3,708	7,330
TFR 2.2			
500,000	720	2,027	4,403
750,000	1,081	3,040	6,592
1,000,000	1,440	4,053	8,806
	COLLEGE		
TFR 1.8			
500,000	365	914	1,659
750,000	548	1,340	2,435
1,000,000	730	1,827	3,318
TFR 2.0			
500,000	368	979	1,939
750,000	552	1,469	2,908
1,000,000	736	1,959	3,877
TFR 2.2			
500,000	371	1,055	2,294
750,000	557	1,582	3,441
1,000,000	742	2,109	4,588

similar traits of the general population. A common device for mirroring the influence of demographic changes on the labor force is through labor force participation rates. These rates measure the pro-

portion of individuals in a particular demographic subgroup (e.g., an age-sex category) that are in the labor force at a given time. Multiplying the number of persons in each demographic subgroup in the population by that subgroup's labor force participation rate and then adding up the results gives the total size of the labor force.

To highlight the effects of fertility and immigration on the labor force, it is assumed that the 1978 labor force participation rates (i.e., the proportion of individuals in a particular age-sex subgroup in the labor force at a given time) illustrated in Table 11 will remain constant throughout the projection period for both the resident and immigrant population.* The estimated size and structure of the U.S. labor force at the start of the projection period are shown in Table 12. These data are derived by applying 1978 labor force participation rates to the extended population as of July 1, 1980.** In this Table, over half the labor force is under age 35, reflecting the fact that persons born during the baby boom were also under 35 years of age in 1980.

Projections of the future total size of the labor force under alternative fertility and immigration assumptions are shown in Table 13. Because high fertility and high levels of net international migration are conducive to rapid rates of population growth, the largest projected labor force, equal to 229.4 million, is produced in the year 2080 when a total fertility rate (TFR) of 2.2 is combined with annual net migration of 1 million. Conversely, the labor force is projected to *decline* by 16 percent between 1980 and 2080 if fertility stays below replacement level at TFR = 1.8 and there is no net international migration.

Between 1980 and 2000 the labor force will tend to grow faster than total population as the "baby boom" generation enters those ages characterized by the highest rates of labor force participation. Between 2000 and 2080, the reverse will occur as this large group reaches retirement age. These differential rates of growth of the labor force and of total population have implications for the dependency burden***, a measure that refers to the number of persons out of the labor force that each member in the labor force has to support. Holding

TABLE 11

U.S. Civilian Labor Force Participation, By Age and Sex, 1978 (Percent)

Age	Males	Females
15-19	49.7	43.1
20-24	86.0	68.3
25-34	95.4	62.1
35-44	95.7	61.6
45-54	91.3	57.1
55-59	82.9	48.6
60-64	62.0	33.1
65-69	30.5	15.4
70+	14.0	4.6

Sources: U.S. Bureau of Labor Statistics, "Employment and Unemployment During 1978: An Analysis." *Special Labor Force Report*, No. 218; and U.S. Bureau of Labor Statistics, "Marital and Family Characteristics of the Labor Force, March 1979." *Special Labor Force Report*, No. 237.

*The assumption that participation rates will remain constant is likely to be in error (although differences attributed to immigration will not be affected), especially for females, whose participation rates have risen sharply in the past two decades. In 1980, for example, women made up 43 percent of the U.S. labor force. If these increases continue, they will affect the projections in several ways. Most obviously, the size of the labor force will be larger than projected in Table 13. The labor force is also likely to be more female. In these projections the sex ratio of the labor force changes little across alternative assumptions. The percent of males in the total labor force ranges between 59.7 and 60.7. But this percentage would obviously fall if past trends in male and female labor force participation rates were extrapolated into the future.

**See "Impact of Immigration of U.S. Population Size," p. 17 for a discussion on selecting a base population. In this instance, that base is derived from Census Bureau projections which estimated a population of 222,117,904. The Census of 1980, in fact, enumerated 226,504,825 people. As a result, all projections in this report err on the low side. Proportional changes, however, are not affected.

***Dependency burden involves *economic* dependency and includes persons of all ages. This is not to be confused with *dependency ratio*, which indicates *age* dependency or relative numbers of people in and out of the working ages.

TABLE 12

Estimated U.S. Labor Force by Age and Sex, July 1, 1980*

Age Group	TOTAL Number (1,000s)	TOTAL Percent	Males Number (1,000s)	Males Percent	Females Number (1,000s)	Females Percent
Total	106,237	100.0	62,885	100.0	43,352	100.0
15-34	54,177	51.0	31,415	49.9	22,762	52.5
35-54	36,822	34.7	22,052	35.1	14,770	34.1
55+	15,238	14.3	9,418	15.0	5,820	13.4

*Based on 1978 labor force participation rates illustrated in Table 11.

fertility constant at 1.8, the dependency burden varies from a high of 1.26 with zero net migration in 2080, to a low of 1.02 with 1 million net migration in 2000. Thus, can immigration be used to slow down the expected increase in the dependency burden after 2000 as the baby boom generation begins to retire? Since many immigrants tend to be in the young working age groups, it is sometimes suggested that encouraging more migration might lessen the heavy pressures likely to be experienced by the Social Security system between 2010 and 2030. Although Table 13 contains evidence that such a policy might begin to achieve this objective, the magnitude of this effect appears to be small when judged in light of the range of assumptions used.

What impact does immigration have on the projected age structure of the labor force? The projected labor force over the next one hundred years is markedly older than today's and the median age increases with time. In general, the effects of changes in fertility on the age composition of the labor force are greater than the effects of immigration. Variations in the total fertility rate between 1.8 and 2.2 produce changes from one to two years in the median age of the labor force in the year 2080. By contrast, the effect of extreme variations in immigration assumptions on the median age in 2080 is between 0.2 and 0.7 of a year. Differences are even smaller in earlier years. The reason is that while immigrants enter the population at practically all ages they are concentrated in the young-middle age range. Since alternative immigration assumptions hold the age distribution of immigrants constant, there is relatively little impact on the median age of the population. Changes in fertility, on the other hand, have their effects concentrated at one end of the age distribution. While the issue of whether an aging labor force is good or bad for the economy has yet to be resolved, proposals to change levels of immigration are unlikely to play a part in the debate since they have little effect on labor force age structure one way or the other.

What contribution does immigration make to the growth of the labor force? Shown in Table 14 are the projected ratios of the size of the total labor force under alternative immigration assumptions compared to its size with no net international migration. The largest ratio should emerge when fertility rates are low and combined with a large volume of net migration. Indeed, by 2080, with a TFR of 1.8 and net international migration of 1 million, the effect of immigration is to create a labor force some 70 percent larger than if there were no immigration. Even if fertility rates are above replacement level and net migration is 500,000 per year, the labor force by 2080 would still be one-quarter larger than if there were no immigration.

TABLE 13

Projected U.S. Civilian Labor Force, 2000-2080, Absolute Size and as a Percent of Total Population by Total Fertility Rate and Annual Net International Migration

Total Fertility Rate	Year 2000 Labor Force (1,000s)	2000 Percent of Total Population	2030 Labor Force (1,000s)	2030 Percent of Total Population	2080 Labor Force (1,000s)	2080 Percent of Total Population
			ANNUAL NET MIGRATION = 0			
1.8	120,094	49.3	112,112	45.8	89,169	44.2
2.0	120,896	48.3	121,858	45.5	116,184	44.6
2.2	121,780	47.3	132,993	45.1	151,350	44.3
			ANNUAL NET MIGRATION = 500,000			
1.8	126,105	49.4	128,438	46.3	120,474	44.9
2.0	126,915	48.4	138,635	45.9	150,766	45.0
2.2	127,805	47.4	150,279	45.4	190,827	44.9
			ANNUAL NET MIGRATION = 750,000			
1.8	129,111	49.4	136,602	46.5	136,125	45.2
2.0	129,924	48.4	147,027	46.1	168,058	45.2
2.2	130,819	47.4	158,926	45.5	210,130	45.0
			ANNUAL NET MIGRATION = 1,000,000			
1.8	132,141	49.5	144,762	46.6	151,779	45.3
2.0	132,929	48.5	155,413	46.2	185,347	45.3
2.2	133,678	47.4	167,509	45.6	229,435	45.1

Perhaps a more illuminating way of revealing the significance of these ratios is to consider the division of the labor force into (1) 1980 residents and their descendants, and (2) post-1980 immigrants and their descendants. Table 15 shows that if fertility were to remain at 1.8 births per woman and if net international migration were 1 million each year, by the year 2080 two out of every five labor force members would be post-1980 immigrants or their descendants. Should net migration be limited to 500,000 per year, that proportion would be one in four. Thus, immigrants comprise a larger share of the labor force the lower the level of fertility and the higher the volume of net international migration.

Both Tables 14 and 15 focus on the size of the labor force at a particular time. Dynamic aspects of labor force size and composition are illustrated in Table 16, which shows the change in the size of the labor force (in absolute and relative terms) and how much of this is due to change in the resident portion of the labor force or the immigrant portion. When viewed over time, the contribution of immigration to labor force growth is substantial. Specifically, for the periods 2000-2030 and 2030-2080, immigration is a more important contributor to labor force growth than is the change in the resident labor force, regardless of level of fertility or immigration. Indeed, between 2030 and 2080, in those instances

TABLE 14

Projected Ratio of Labor Force Size Under Alternative Immigration Assumptions to its Size with No Immigration*, 2000-2080

Fertility	Year 2000	2030	2080
ANNUAL NET MIGRATION = 500,000			
1.8	1.050	1.146	1.351
2.0	1.050	1.138	1.298
2.2	1.049	1.130	1.261
ANNUAL NET MIGRATION = 750,000			
1.8	1.075	1.218	1.527
2.0	1.075	1.207	1.446
2.2	1.074	1.195	1.388
ANNUAL NET MIGRATION = 1,000,000			
1.8	1.100	1.291	1.702
2.0	1.100	1.275	1.595
2.2	1.098	1.260	1.516

*Ratios obtained from Table 13 by dividing projected labor force assuming 500,000, 750,000, and 1,000,000 immigrants by corresponding numbers assuming no annual net international migration.

TABLE 15

Projected Proportion of the Labor Force, Post-1980 Immigrants and Descendants, 2000-2080, by Total Fertility Rate and Annual Net International Migration

Fertility and Net International Migration	Year 2000	2030	2080
TFR 1.8			
500,000	4.8	12.7	26.0
750,000	7.0	17.9	34.5
1,000,000	9.1	22.6	41.3
TFR 2.0			
500,000	4.7	12.1	22.9
750,000	6.9	17.1	30.9
1,000,000	9.1	21.6	37.3
TFR 2.2			
500,000	4.7	11.5	20.7
750,000	6.9	16.3	28.0
1,000,000	8.9	20.6	34.0

TABLE 16

Labor Force Growth and Components of Change, 1980-2080, By Total Fertility Rate and Annual Net International Migration (in 1,000s)

Total Fertility Rate	Year: 1980-2000 Change in Labor Force Size	1980-2000 Change due to Immigration	2000-2030 Change in Labor Force Size	2000-2030 Change due to Immigration	2030-2080 Change in Labor Force Size	2030-2080 Change due to Immigration
ANNUAL NET MIGRATION = 0						
1.8	13,857	0	−7,982	0	−22,943	0
	(13.0)*		(−6.6)		(−20.5)	
2.0	14,659	0	962	0	−5,674	0
	(13.8)		(0.8)		(−4.7)	
2.2	15,543	0	11,213	0	18,357	0
	(14.6)		(9.2)		(13.8)	
ANNUAL NET MIGRATION = 500,000						
1.8	19,868	6,011	2,333	10,315	−7,964	14,979
	(18.7)	(5.7)	(1.9)	(8.2)	(−6.2)	(11.7)
2.0	20,678	6,019	11,720	10,758	12,131	17,805
	(19.5)	(5.7)	(9.2)	(8.5)	(8.8)	(12.9)
2.2	21,568	6,025	22,474	11,261	40,548	22,191
	(20.3)	(5.7)	(17.6)	(8.8)	(27.0)	(14.8)
ANNUAL NET MIGRATION = 1,000,000						
1.8	25,904	12,047	12,621	20,603	7,017	29,960
	(24.4)	(11.4)	(9.6)	(15.6)	(4.8)	(20.7)
2.0	26,692	13,033	22,484	21,522	29,934	35,608
	(25.1)	(11.3)	(16.9)	(16.2)	(19.3)	(22.9)
2.2	27,441	11,898	33,831	22,618	61,926	43,569
	(25.8)	(11.2)	(25.3)	(16.9)	(37.0)	(26.0)

*Figures in parentheses are percent changes and are based on the size of the total labor force at the beginning of the period.

where fertility is below replacement level, immigration either prevents a decline in labor force size or reduces the extent of decline. For example, with the TFR at 2.0 and with an annual net international migration of 500,000, the effect of immigration is to convert what could have been a projected 4.1 percent decline in the labor force without immigration into an 8.8 percent increase.

Some analysts have speculated that the decline in the U.S. birth rate over the past 15 years might create a labor shortage in this country that could only be met by relaxing our immigration policy. So far the evidence on this point is relatively sparse. At its greatest, the difference between the largest and smallest birth cohorts in the post-1955 period is just over 1 million. Since the mid-1970s, the annual number of births has been increasing and is presently over 3.6 million. The size of future generations entering the labor force should not vary significantly from year to year. Moreover, with improved health and longevity among the population over 55 years old, temporary labor shortages could possibly

be met entirely through increased participation rates in this age group. Labor shortages and labor surpluses arise because of the interaction of the forces of supply and demand. This report's projections are not intended to address this issue. The projections included here are of labor *supply* only and do not embrace aspects of labor demand. Nevertheless, given the concern with the impact of immigration on U.S. labor force growth and composition, there is a compelling argument for close coordination between the formulation of employment and immigration policy, with changes in fertility behavior also being given consideration.

The Elderly

The growing size of the elderly population and its special needs (such as medical care) are an increasing cause of concern in the U.S. This demographic trend has forced policymakers to reevaluate long-run plans for the retirement system and other programs to assist the elderly—here defined as persons aged 65 and over. Will immigration exacerbate this growing problem or will it make little difference?

Projecting the elderly population for the next 65 years is relatively simple. The people being counted are already born. Immigration and mortality are the only variables contributing to the numbers of elderly between now and 2045.* Because of the baby boom generation, the elderly population will grow in size after about the year 2015 with or without immigration.

*This report assumes some progress in life expectancy, particularly for the next 50 years. As a result, the number of elderly in future years is greater than that projected by the Bureau of the Census.

TABLE 17

Projected Number (in 1,000s) and Percent of the Population Aged 65 and Over, 2000-2080, by Total Fertility Rate and Annual Net International Migration

Total Fertility Rate	Year							
	2000		2030		2050		2080	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number
ANNUAL NET MIGRATION = 0								
1.8	13.1	31,928	21.9	53,654	23.0	52,282	25.0	50,391
2.0	12.8	—*	20.0	—	20.3	53,659	21.9	57,350
2.2	12.4	—	16.2	—	17.7	55,152	19.2	65,425
ANNUAL NET MIGRATION = 500,000								
1.8	12.7	32,484	20.6	57,182	21.5	58,937	23.3	62,485
2.0	12.4	—	18.9	—	19.2	60,142	20.8	69,728
2.2	12.0	—	17.3	—	16.9	61,916	18.4	73,250
ANNUAL NET MIGRATION = 1,000,000								
1.8	12.4	33,039	19.6	60,709	20.5	65,792	22.2	74,324
2.0	12.1	—	18.1	—	18.4	67,164	20.1	82,106
2.2	11.7	—	16.6	—	16.4	68,821	17.9	91,118

*Fertility differentials do not affect total population size 65 and over until 2045.

When calculating the proportion of elderly in the population in any given year, fertility once again becomes an important variable. All else being equal, the higher the fertility, the lower the proportion of the population who will be 65 and over. Table 17 also illustrates that the greater the number of immigrants the lower the percent of elderly. This reflects the "young" median age of the immigrant population in comparison to the resident population in 1980. As a result of these two factors, the proportion of the elderly in the population of the United States in 2080 could range from 17.9 percent—with a TFR of 2.2 and annual international migration of 1 million—to 25.0 percent—with a TFR of 1.8 and no net migration. This compares to the 11 percent of the population who were age 65 and over in 1980.

Just as the relative youth of the immigrant population contributes slightly to a decline in the proportion of elderly in future years, it also means that a substantial number of immigrants will not enter the ranks of the elderly themselves until the second half of the 21st century. The impact of the baby boom far exceeds any other contributing factor to the numerical growth of the elderly population. Without immigration, the number of elderly will more than double over the next 50 years to 54 million in 2030, before declining somewhat around 2050 when the final remnants of that giant generation begin to die out. Regardless of immigration levels, the increase in the number of elderly between 2000 and 2030 will be considerable. The total number of persons over 65 could reach 61 million, if net migration is as much as 1 million per year. Yet even this figure represents only a 13 percent increase over what the number would be without immigration. Although immigration increases the number of elderly, the proportion of elderly in the total population is lessened somewhat.

While the proportion of immigrants and their descendants in the total elderly population will necessarily increase over time, it will not keep pace with the comparative increase in the overall population. For example, in 2080, with low fertility and high immigration, 40 percent of the total population would consist of post-1980 immigrants and their descendants; among the elderly that proportion will be only 33 percent.

It is difficult to foresee that immigration will make any major impact on the elderly population for the next 50 years. The problems associated with an aging population are critical—adding immigrants exacerbates them ever so slightly numerically; but it alleviates the problem, again ever so slightly, by lowering the proportion of the elderly in the total population.

Conclusion

The many issues involving regional distribution, school enrollment, the labor force, and the elderly should not be discussed without also looking at past and future U.S. fertility, as well as net international migration. It is important that policy decisions concerning immigration levels take into consideration the fertility trends of the U.S. people—resident and immigrant alike.

With continued low, below replacement level fertility, the proportional impact of immigration on regions, schools, and the labor force is great. If net migration was sustained at 1 million per year, the proportion of elementary school students in the nation who are post-1980 immigrants or their descendants could reach 43 percent in one hundred years. Over 41 percent of the labor force in 2080 and 32 percent of the elderly population would consist of post-1980 immigrants and their descendants. The impact is particularly significant in some states. In California the proportion of immigrants and their descendants attending schools, entering the labor force, and growing old becomes quite significant over time. Close to two-thirds of California's population in 2080 will consist of this group, given a TFR of 1.8 and net migration of 1 million.

Should fertility increase, the impact of immigration will be significantly reduced. With a TFR of 2.2 and net migration of 1 million, the proportion of

children enrolled in elementary schools in 2080 who are post-1980 immigrants or their descendants would be 33 percent, and about 34 percent of the labor force would fall into this category. *But* the overall numbers of people included will be much greater. For example, given a TFR of 2.2 and net immigration of 500,000 per year, California's 2080 population would surpass 57 million, the nation's elementary schools would be educating about 52 million students, there would be 190 million people in the labor force, and the elderly would number in excess of 78 million.

Since both fertility fluctuations and variations in immigration have an impact on population size, there is a need for an integrated policy approach that takes both factors into consideration.

In terms of regional distribution, immigrants have traditionally settled in a few preferred states. There is no evidence to suggest any change in these preferences. As a result, California and the West in general, Florida and Texas, and the South in general, and New York can expect a greater impact from immigration on both growth rates and absolute numbers than the rest of the nation.

The assumed age composition of the immigrant population has its own effect on the society. Being somewhat younger than the general population, immigration tends to retard, but not end, the aging process which results from low fertility. The greater the immigration the stronger the impact.

The effect of immigrant age structure is noted in both school enrollment and labor force participation. Over the next 50 years, school enrollment will only increase substantially if immigration reaches 750,000 or more per year—given low fertility levels and the fact that the baby bust cohort is just now entering that phase of life.

Under the same assumptions, however, the labor force will grow from its present 106 million to 129 million in the year 2000 and 137 million in 2030. This reflects both the baby boom entering adulthood and the immigration of young adults to the U.S. However, when members of the baby bust cohort become adults, the size of the labor force may fall somewhat, possibly giving rise to a demand for either increased immigration or greater participation of women and elderly in the labor force.

Many aspects of American life from kindergarten through retirement will be affected in some way by continued relatively high levels of immigration, but the intensity of that impact will depend to a great extent on future as well as past levels of fertility. Both must be considered in planning for the future.

Footnotes

[1]Leon F. Bouvier, "The Impact of Immigration on U.S. Population Size," *Population Trends and Public Policy, Number 1*, Population Reference Bureau, 1981, p. 8.
[2]*Ibid*, p. 18.
[3]*U.S. Immigration Policy and the National Interest*, Final Report of the Select Commission on Immigration and Refugee Policy, March 1, 1981, p. 162.
[4]Frank D. Bean, Gray Swicegood, and Thomas F. Linsley, "Patterns of Fertility Variations Among Mexican Immigrants to the U.S.," Paper prepared for SCIRP, 1980.
[5]Bouvier, *op cit.*, p. 12.

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